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<110> E. I. du Pont de Nemours and Company

<120> Lysophosphatidic Acid Acetyltransferases

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<140> 09/914,098

<141> 2001-08-22

<150> 60/121,119

<151> 1999-02-22

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<213> Zea mays

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gatagatttc	attattctgg	agcaaattgac	agcatttgct	gtcatcatgc	agaagcatcc	240
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gagaaatgaa	gggacgtaaa	gccgtacaag	tgcacttcgt	tagggtttta	catgcagcta	840
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<213> Zea mays

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35 40 45
Pro His Gln Val Phe Val Ala Asn His Thr Ser Met Ile Asp Phe Ile
50 55 60
Ile Leu Glu Gln Met Thr Ala Phe Ala Val Ile Met Gln Lys His Pro
65 70 75 80
Gly Trp Val Gly Phe Ile Gln Lys Thr Ile Leu Glu Ser Val Gly Cys
85 90 95
Ile Trp Phe Asn Arg Asn Asp Leu Arg Asp Arg Glu Val Thr Ala Arg
100 105 110
Lys Leu Arg Asp His Val Gln Gln Pro Asp Asn Asn Pro Leu Leu Ile
115 120 125
Phe Pro Glu Gly Thr Cys Val Asn Asn Gln Tyr Thr Val Met Phe Lys
130 135 140
Lys Gly Ala Phe Glu Leu Gly Cys Ala Val Cys Pro Ile Ala Ile Lys
145 150 155 160
Tyr Asn Lys Ile Phe Val Asp Ala Phe Trp Asn Ser Lys Lys Gln Ser
165 170 175
Phe Thr Met His Leu Val Arg Leu Met Thr Ser Trp Ala Val Val Cys
180 185 190
Asp Val Trp Tyr Leu Pro Pro Gln Tyr Leu Arg Glu Gly Glu Thr Ala
195 200 205
Ile Ala Phe Ala Glu Arg Val Arg Asp Met Ile Ala Ala Arg Ala Gly
210 215 220
Leu Lys Lys Val Pro Trp Asp Gly Tyr Leu Lys His Asn Arg Pro Ser
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Met Arg Leu Glu Glu Lys
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actcancgaa tatttgttgc tttccttctc tgtgcttggg actagggcga gaataacttca 240
natanccatc ccaaggaacc tttttaagcc cagcacgatg tgagattatg tctctaactc 300
tctctgcaaa ttcaatgggt gtctctcctg gcttcaaatt ttgtggntcc aagtaccata 360
catcacannc nacagcccaa gatgtcatta attgcaagag atgnctgggt aangattgct 420
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<212> PRT
<213> Glycine max

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Ser Arg Lys Gln Ser Phe Thr Xaa His Leu Leu Gln Leu Met Thr Ser
      20             25             30

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Trp Ala Val Xaa Cys Asp Val Trp Tyr Leu Xaa Pro Gln Asn Leu Lys
      35             40             45

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Pro Gly Glu Thr Pro Ile Glu Phe Ala Glu Arg Val Arg Asp Ile Ile
      50             55             60

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Ser His Arg Ala Gly Leu Lys Lys Val Pro Trp Asp Gly Tyr Xaa Lys
      65             70             75             80

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Tyr Ser Arg Pro Ser Pro Lys His Arg Glu Gly Lys Gln Gln Ile Phe
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Xaa Glu Ser Val Leu Arg Arg Phe Glu Glu Lys
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 atttgctgtc atcatgcaaa agcatcctgg atggggttga tttattcaga agactattct 180
 ggaaaagtgtg gttgcatctg ggtttaaccg taatgatctc aaggatcgtg aagtagttgg 240
 aagaaagtta cgtgatcaag ttcagcatcc agacaacaat cctctcttga ttttcccgga 300
 aggaacttgt gttaataatc agtacactgt gatgttcaag aagggtgctt ttgagcttgg 360
 ctgtgctgta tgtccaatag ctatcaaata taataaaata tttgttgacg cttctctggaa 420
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 tactgaaaga gtgagggaca tgatagctgc tcgggctggt cttagaagg ttccatggga 600
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 <213> Triticum aestivum

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35 40 45
Pro Gly Trp Val Gly Phe Ile Gln Lys Thr Ile Leu Glu Ser Val Val
50 55 60
Ala Ser Gly Phe Asn Arg Asn Asp Leu Lys Asp Arg Glu Val Val Gly
65 70 75 80
Arg Lys Leu Arg Asp Gln Val Gln His Pro Asp Asn Asn Pro Leu Leu
85 90 95
Ile Phe Pro Glu Gly Thr Cys Val Asn Asn Gln Tyr Thr Val Met Phe
100 105 110
Lys Lys Gly Ala Phe Glu Leu Gly Cys Ala Val Cys Pro Ile Ala Ile
115 120 125
Lys Tyr Asn Lys Ile Phe Val Asp Ala Phe Trp Asn Ser Lys Lys Gln
130 135 140
Ser Phe Thr Met His Leu Val Arg Leu Met Thr Ser Trp Ala Val Val
145 150 155 160
Cys Asp Val Trp Ser Trp Glu Pro Gln Tyr Leu Arg Glu Gly Glu Thr
165 170 175
Ala Ile Glu Phe Thr Glu Arg Val Arg Asp Met Ile Ala Ala Arg Ala
180 185 190
Gly Leu Lys Lys Val Pro Trp Asp Gly Tyr Leu Lys His Asn Arg Pro
195 200 205
Ser Pro Lys His Thr Glu Glu Lys Gln Arg Met Phe Ala Glu Ser Val
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Leu Arg Arg Leu Glu Glu Asn
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<212> DNA
<213> Zea mays

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ggttgccact tattggtctc ataagcaatt gtcttggatg catttttgtt caacgagaat 360
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tgcgtgtttt tatacctgta atgtggcagt ttatttgttt gaggaggctg ttgagtacct 960
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<213> Zea mays

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Arg Val Met Leu Phe Val Phe Gly Phe Tyr Trp Ile Arg Glu Thr Arg
          35          40          45

Arg Arg Ser Thr Asn Ala Lys Gly Leu Asn Gln Asp Gln Phe Glu Glu
 50          55          60

Ser Gln Arg Pro Gly Ala Ile Val Ser Asn His Val Ser Tyr Val Asp
 65          70          75          80

Ile Leu Tyr His Met Ser Ala Ser Phe Pro Ser Phe Val Ala Lys Glu
          85          90          95

Ser Val Ser Arg Leu Pro Leu Ile Gly Leu Ile Ser Asn Cys Leu Gly
          100          105          110

Cys Ile Phe Val Gln Arg Glu Ser Lys Ser Ser Glu Ala Lys Gly Val
          115          120          125

Ser Gly Ala Val Thr Glu Arg Ile Gln Asp Val Cys Gln Asp Lys Asn
          130          135          140

Thr Pro Met Met Leu Leu Phe Pro Glu Gly Thr Thr Thr Asn Gly Asp
          145          150          155          160

Tyr Leu Leu Pro Phe Lys Thr Gly Ala Phe Leu Ala Gly Ala Pro Val
          165          170          175

Gln Pro Val Ile Leu Lys Tyr Pro Tyr Arg Arg Phe Ser Pro Ala Trp
          180          185          190

Asp Ser Met Asp Gly Ala Arg His Val Phe Leu Leu Leu Cys Gln Phe
          195          200          205

Val Asn His Met Glu Val Val Arg Leu Pro Val Tyr Tyr Pro Ser Gln
          210          215          220

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Leu Glu Lys Glu Asp Pro Lys Leu Tyr Ala Asn Asn Val Arg Lys Leu
225 230 235 240

Ile Ala Met Glu Gly Asn Leu Val Leu Ser Asn Ile Gly Leu Ala Glu
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Lys Arg Val Tyr His Ala Ala Leu Thr Gly Ser Ser Leu Pro Gly Ala
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Arg His Glu Lys Asp Asp
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Val Ser Ala Asp Ser Ile Ala Asp Met Glu Lys Lys Phe Ala Ala Tyr
35 40 45

Val Arg Arg Asp Val Tyr Gly Thr Met Gly Arg Gly Glu Leu Pro Pro
50 55 60

Lys Glu Lys Leu Leu Leu Gly Phe Ala Leu Val Thr Leu Leu Pro Ile
 65 70 75 80
 Arg Val Val Leu Ala Val Thr Ile Leu Leu Phe Tyr Tyr Leu Ile Cys
 85 90 95
 Arg Val Cys Thr Leu Phe Ser Ala Pro Thr Gly Glu Glu Glu Gln Glu
 100 105 110
 Asp Tyr Ala His Met Ser Gly Trp Arg Arg Thr Ile Ile Val Ser Cys
 115 120 125
 Gly Arg Ala Leu Ser Arg Leu Met Leu Phe Ile Phe Gly Phe Tyr Trp
 130 135 140
 Ile Pro Glu Ser Asn Ser Ala Ser Gln Glu Asp Lys Ser Arg Gln Pro
 145 150 155 160
 Glu Glu Leu Arg Arg Pro Gly Val Ile Ile Ser Asn His Val Ser Tyr
 165 170 175
 Leu Asp Ile Leu Tyr His Met Ser Ser Ser Phe Pro Ser Phe Val Ala
 180 185 190
 Lys Arg Ser Val Ala Lys Leu Pro Leu Val Gly Leu Ile Ser Lys Cys
 195 200 205
 Leu Gly Cys Val Tyr Val Gln Arg Glu Ser Arg Ser Ser Asp Phe Lys
 210 215 220
 Gly Val Ser Ala Val Val Thr Asp Arg Ile Arg Glu Ala His Gln Asn
 225 230 235 240
 Glu Ser Ala Pro Leu Met Met Leu Phe Pro Glu Gly Thr Thr Thr Asn
 245 250 255
 Gly Glu Phe Leu Leu Pro Phe Lys Thr Gly Gly Phe Leu Ala Lys Ala
 260 265 270
 Pro Val Leu Pro Val Ile Leu Arg Tyr His Tyr Gln Arg Phe Ser Pro
 275 280 285
 Ala Trp Asp Ser Ile Ser Gly Val Arg His Val Ile Phe Leu Leu Cys
 290 295 300
 Gln Phe Val Asn Tyr Met Glu Val Ile Arg Leu Pro Val Tyr His Pro
 305 310 315 320
 Ser Gln Gln Glu Met Asp Asp Pro Lys Leu Tyr Ala Asn Asn Val Arg
 325 330 335
 Arg Leu Met Ala Thr Glu Gly Asn Leu Ile Leu Ser Asp Ile Gly Leu
 340 345 350
 Ala Glu Lys Arg Ile Tyr His Ala Ala Leu Asn Gly Asn Asn Ser Leu
 355 360 365
 Pro Ser Val Leu His Gln Lys Asp Glu
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 tactctccat tanacaganc ttcttgcaang gacatgcaac tgtatttggn atacctacag 480
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<210> 12
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 <221> UNSURE
 <222> (149)
 <223> Xaa = any amino acid

<220>
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 <222> (156)
 <223> Xaa = any amino acid

<220>
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 <222> (175)
 <223> Xaa = any amino acid

<220>
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 <222> (177)..(178)..(179)
 <223> Xaa = any amino acid

<220>
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 <222> (185)
 <223> Xaa = any amino acid

<220>
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 <222> (187)
 <223> Xaa = any amino acid

<220>
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 <222> (190)
 <223> Xaa = any amino acid

<400> 12
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 Arg Ala Met Leu Phe Val Phe Gly Phe Tyr Trp Ile Pro Val Ser Asp
 20 25 30
 Arg Ser Phe Pro Asn Ala Glu Asp Val Pro Lys Asp His Tyr Glu Glu
 35 40 45
 Leu Glu Arg Pro Gly Ala Ile Val Ser Asn His Val Ser Tyr Val Asp
 50 55 60
 Ile Leu Tyr His Met Ser Ala Ser Ser Pro Ser Phe Val Ala Lys Asn
 65 70 75 80
 Ser Val Ser Lys Leu Pro Leu Ile Gly Leu Ile Ser Lys Cys Leu Gly
 85 90 95
 Cys Ile Phe Val Gln Arg Glu Pro Asn Val Gln Ile Leu Lys Gly Leu
 100 105 110

Lys Cys Cys Asn Lys Ser Met Xaa Ser Gln Gly Arg Glu Ser Leu Tyr
 115 120 125
 Leu Xaa Phe Pro Glu Xaa Thr Leu Gln Trp Asp Tyr Ser Pro Leu Xaa
 130 135 140
 Arg Xaa Ser Cys Xaa Asp Met Gln Leu Tyr Leu Xaa Tyr Leu Gln Arg
 145 150 155 160
 Leu Ser Thr Trp Asp His Asp Gly Thr Gln Val Phe Ala Pro Xaa Phe
 165 170 175
 Xaa Xaa Xaa Arg Val Pro Ser Glu Xaa Leu Xaa Lys Arg Xaa Ser Ile
 180 185 190

Ser Lys

<210> 13
 <211> 1501
 <212> DNA
 <213> Arabidopsis thaliana

<400> 13
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 tcagtggata agaaggaaag ggaaacctgc tcggagagag attgctccga ttgttgatc 120
 aaatcatggt tcttatattg aaccaatctt ctacttctat gaattatcac cgaccattgt 180
 tgcacgcggag tcacatgatt cacttccatt tgttggaact attatcaggg caatgcagg 240
 gatatatgtg aatagattct cacagacatc aaggaagaat gctgtgcatg aaataaagag 300
 aaaagcttcc tgcgatagat ttctctgtct gctgttattc cccgaaggaa ccacgactaa 360
 tgggaaagtt cttatttctt tccaactcgg tgctttcatc cctgggtacc ctattcaacc 420
 tgtagtagtc cggtatcccc atgtacattt tgatcaatcc tggggaaata tctctttgtt 480
 gacgctcatg tttagaatgt tcaactcagtt tcacaatttc atggagggtg aatatcttcc 540
 tgtaatctat ccagtgaaa agcaaaagca gaatgctgtg cgtctctcac agaagactag 600
 tcatgcaatt gcaacatctt tgaatgtcgt ccaaaccatcc cattcttttg cggacttgat 660
 gctactcaac aaagcaactg agttaagct ggagaacccc tcaaattaca tgggtgaaat 720
 ggcaagagtt gagtcgctat tccatgtaag cagcttagag gcaacgcgat ttttggatac 780
 atttgtttcc atgattccgg actcgagtgg acgtgttagg ctacatgact ttcttcgggg 840
 tcttaaactg aaaccttgcc ctctttctaa aaggatattt gagttcatcg atgtggagaa 900
 ggtcggatca atcactttca aacagttctt gtttgctcgg ggccacgtgt tgacacagcc 960
 gctttttaag caaacatgcg agctagcctt ttcccattgc gatgcagatg gagatggcta 1020
 tattacaatt caagaactcg gagaagctct caaaaacaca atcccaaact tgaacaagga 1080
 cgagattcga ggaatgtacc atttgctaga cgacgaccaa gatcaaagaa tcagccaaaa 1140
 tgacttggtg tcttgcttaa gaagaaaccc tcttctcata gccatctttg cacctgactt 1200
 ggccccaaca taacacagag agacaaaatg gctggctaag atttggtgtg cgatgattgt 1260
 aaacttgtct ttgtggtata ttattatacc ttttgttttg tcttcatatt tgatttcagc 1320
 tagtaaaaag aagggactgc tatgttttta gcctatatat ataccctcct ccaacatgga 1380
 tccatccttt tgagtgttgg actataactg cttgtcgttt tccaccccaa aaaacgctat 1440
 ggtgtttgct cctctagttc tgagcaaaact ttgctgtaaa aaaaaaaaaa aaaaaaaaaa 1500
 a 1501

<210> 14
 <211> 403
 <212> PRT
 <213> Arabidopsis thaliana

<400> 14
 Cys Arg Ile Met Trp Ile Thr Arg Ile Cys Thr Arg Cys Ile Leu Phe
 1 5 10 15

Ser Phe Gly Tyr Gln Trp Ile Arg Arg Lys Gly Lys Pro Ala Arg Arg
 20 25 30
 Glu Ile Ala Pro Ile Val Val Ser Asn His Val Ser Tyr Ile Glu Pro
 35 40 45
 Ile Phe Tyr Phe Tyr Glu Leu Ser Pro Thr Ile Val Ala Ser Glu Ser
 50 55 60
 His Asp Ser Leu Pro Phe Val Gly Thr Ile Ile Arg Ala Met Gln Val
 65 70 75 80
 Ile Tyr Val Asn Arg Phe Ser Gln Thr Ser Arg Lys Asn Ala Val His
 85 90 95
 Glu Ile Lys Arg Lys Ala Ser Cys Asp Arg Phe Pro Arg Leu Leu Leu
 100 105 110
 Phe Pro Glu Gly Thr Thr Thr Asn Gly Lys Val Leu Ile Ser Phe Gln
 115 120 125
 Leu Gly Ala Phe Ile Pro Gly Tyr Pro Ile Gln Pro Val Val Val Arg
 130 135 140
 Tyr Pro His Val His Phe Asp Gln Ser Trp Gly Asn Ile Ser Leu Leu
 145 150 155 160
 Thr Leu Met Phe Arg Met Phe Thr Gln Phe His Asn Phe Met Glu Val
 165 170 175
 Glu Tyr Leu Pro Val Ile Tyr Pro Ser Glu Lys Gln Lys Gln Asn Ala
 180 185 190
 Val Arg Leu Ser Gln Lys Thr Ser His Ala Ile Ala Thr Ser Leu Asn
 195 200 205
 Val Val Gln Thr Ser His Ser Phe Ala Asp Leu Met Leu Leu Asn Lys
 210 215 220
 Ala Thr Glu Leu Lys Leu Glu Asn Pro Ser Asn Tyr Met Val Glu Met
 225 230 235 240
 Ala Arg Val Glu Ser Leu Phe His Val Ser Ser Leu Glu Ala Thr Arg
 245 250 255
 Phe Leu Asp Thr Phe Val Ser Met Ile Pro Asp Ser Ser Gly Arg Val
 260 265 270
 Arg Leu His Asp Phe Leu Arg Gly Leu Lys Leu Lys Pro Cys Pro Leu
 275 280 285
 Ser Lys Arg Ile Phe Glu Phe Ile Asp Val Glu Lys Val Gly Ser Ile
 290 295 300
 Thr Phe Lys Gln Phe Leu Phe Ala Ser Gly His Val Leu Thr Gln Pro
 305 310 315 320
 Leu Phe Lys Gln Thr Cys Glu Leu Ala Phe Ser His Cys Asp Ala Asp
 325 330 335

Gly Asp Gly Tyr Ile Thr Ile Gln Glu Leu Gly Glu Ala Leu Lys Asn
 340 345 350
 Thr Ile Pro Asn Leu Asn Lys Asp Glu Ile Arg Gly Met Tyr His Leu
 355 360 365
 Leu Asp Asp Asp Gln Asp Gln Arg Ile Ser Gln Asn Asp Leu Leu Ser
 370 375 380
 Cys Leu Arg Arg Asn Pro Leu Leu Ile Ala Ile Phe Ala Pro Asp Leu
 385 390 395 400
 Ala Pro Thr

<210> 15
 <211> 692
 <212> DNA
 <213> Oryza sativa

<220>
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 <222> (446)
 <223> n = a, c, g, or t

<220>
 <221> unsure
 <222> (579)
 <223> n = a, c, g, or t

<220>
 <221> unsure
 <222> (677)
 <223> n = a, c, g, or t

<400> 15
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 ccgcctccct ctccacgccg ctctctctcg actccatctc gccacgccc accaccaacg 120
 gccacgcggg gcaccataac cagcagcagc acgacgagga gtcgccaacg gtgtgcggcg 180
 gcgatggcgg aggagggggg gaccgcgttc cgttcctatc ggaggatcgg ccggcggtgg 240
 ggtcgccgcg gggggtgtcc ccggccgacc cgttccgcaa cgggacgccg ggggtggtgc 300
 gggcgtagca gctcgtgagg gcgctcgtgt gcgcgcgggt ggcggcggcg aggctggtgc 360
 tggtcgggct ctccatcgcg gtggggtacg ccgccacgtg ggtggcgctc cgcggtggg 420
 tcgacgtgcg ggagcgggcg gcgcangagg gcgcggggcc catgccggcg tggcgccgcc 480
 gcctcatgtg gatcacgcgg attccgcgcg ctgcatactc ttctccttcg gatacattgg 540
 ataaggagaa aggaaaaccg ccctagaaac ttcactatnt ttctaaatca tgttcatcat 600
 agaaccatat actctcatag cttccgacat cgttctcaaa tccatatcat acattttgaa 660
 aatttcagca tcagtantag ttaaaatccc aa 692

<210> 16
 <211> 174
 <212> PRT
 <213> Oryza sativa

<220>
 <221> UNSURE
 <222> (136)
 <223> Xaa = any amino acid

<400> 16
 Met Ala Ser Arg Asn Pro Ser Pro Ala Ser Leu Ser Thr Pro Leu Leu
 1 5 10 15
 Ser Asp Ser Ile Ser Pro Thr Pro Thr Thr Asn Gly His Ala Gly His
 20 25 30
 His Asn His Asp Asp Asp Asp Glu Glu Ser Pro Thr Val Cys Gly Gly
 35 40 45
 Asp Gly Gly Gly Gly Gly Asp Pro Phe Ala Phe Leu Ser Glu Asp Arg
 50 55 60
 Pro Ala Trp Trp Ser Pro Arg Gly Val Ser Pro Ala Asp Pro Phe Arg
 65 70 75 80
 Asn Gly Thr Pro Gly Trp Cys Gly Ala Tyr Glu Leu Val Arg Ala Leu
 85 90 95
 Val Cys Ala Pro Val Ala Ala Ala Arg Leu Val Leu Phe Gly Leu Ser
 100 105 110
 Ile Ala Val Gly Tyr Ala Ala Thr Trp Val Ala Leu Arg Gly Trp Val
 115 120 125
 Asp Val Arg Glu Arg Ala Ala Xaa Glu Gly Ala Gly Pro Met Pro Ala
 130 135 140
 Trp Arg Arg Arg Leu Met Trp Ile Thr Arg Ile Pro Arg Ala Ala Ser
 145 150 155 160
 Ser Ser Pro Ser Asp Thr Leu Asp Lys Glu Lys Gly Lys Pro
 165 170

<210> 17
 <211> 480
 <212> DNA
 <213> . Glycine max

<220>
 <221> unsure
 <222> (189)
 <223> n = a, c, g, or t

<220>
 <221> unsure
 <222> (195)
 <223> n = a, c, g, or t

<220>
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 <222> (284)
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 <222> (290)
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<220>
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 <222> (366)
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<220>
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 <222> (377)..(378)
 <223> n = a, c, g, or t

<220>
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 <222> (399)
 <223> n = a, c, g, or t

<220>
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 <222> (419)
 <223> n = a, c, g, or t

<220>
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 <222> (426)
 <223> n = a, c, g, or t

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 <222> (428)
 <223> n = a, c, g, or t

<220>
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 <222> (432)
 <223> n = a, c, g, or t

<220>
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 <222> (454)
 <223> n = a, c, g, or t

<220>
 <221> unsure
 <222> (475)
 <223> n = a, c, g, or t

<400> 17
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 cgccggcgat cgaggggctc tacgagtggg ccaagacggc gctgtgcctg ccgctggcgg 120
 cgctgcggct cgcgctgttc gggctctgcc tcgcggtggg gtacgtggcg acgaaggtgg 180
 cgctggcgang gtggnaggac aaggagaatc ccatgcccac gtggaggtgt agggttatgt 240

ggatcacgcg cttgtgcgcc aaatgtattc tcttctcctt tggntatcan tggataaaaac 300
 ggnaagggaa acctgcacca aggggaaatt gctccaataa attgtatcta aaccatgttt 360
 cntaanagtg agcctannct tcctatttct aagaattant tcctaacaat ggtgggaanc 420
 tgaagncnca anactccata tccttttgtt gggnaccaat taatagagca aatgnaagtc 480

<210> 18
 <211> 107
 <212> PRT
 <213> Glycine max

<220>
 <221> UNSURE
 <222> (63)
 <223> Xaa = any amino acid

<220>
 <221> UNSURE
 <222> (65)
 <223> Xaa = any amino acid

<220>
 <221> UNSURE
 <222> (96)
 <223> Xaa = any amino acid

<220>
 <221> UNSURE
 <222> (101)
 <223> Xaa = any amino acid

<400> 18
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 1 5 10 15
 Arg Asn Arg Thr Pro Ala Ile Glu Gly Leu Tyr Glu Trp Ala Lys Thr
 20 25 30
 Ala Leu Cys Leu Pro Leu Ala Ala Leu Arg Leu Ala Leu Phe Gly Leu
 35 40 45
 Cys Leu Ala Val Gly Tyr Val Ala Thr Lys Val Ala Leu Ala Xaa Trp
 50 55 60
 Xaa Asp Lys Glu Asn Pro Met Pro Lys Trp Arg Cys Arg Val Met Trp
 65 70 75 80
 Ile Thr Arg Leu Cys Ala Lys Cys Ile Leu Phe Ser Phe Gly Tyr Xaa
 85 90 95
 Trp Ile Lys Arg Xaa Gly Lys Pro Ala Pro Arg
 100 105

<210> 19
 <211> 784
 <212> DNA
 <213> Oryza sativa

<220>
 <221> unsure

<222> (560)
 <223> n = a, c, g, or t

<220>
 <221> unsure
 <222> (648)
 <223> n = a, c, g, or t

<220>
 <221> unsure
 <222> (670)
 <223> n = a, c, g, or t

<220>
 <221> unsure
 <222> (739)
 <223> n = a, c, g, or t

<220>
 <221> unsure
 <222> (758)
 <223> n = a, c, g, or t

<400> 19
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 ggagagggcg ctccctcggg ggtgagcatc cagccacctc ggcccgttgc ctccctcttcg 120
 catctcggcc ccgcgagatt ggaagtgagg gcagggcagg gcggcagggg ccatggcggt 180
 cccactcgtg ctcgctcgtgc tcccgtcggg cctcctcttc ctccctctccg gcctcaacgc 240
 catccaggcc gtccctgtttc tctcgataag gccgttctcg aagagcttgt accggcggat 300
 caacaggttc ttggccgagc tgctgtggct tcagctggtc tggcttgtgg attggtgggc 360
 aggagttaag atacaactgc atgctgatga cgaaacttac aaggcaatgg ggaatgagca 420
 tgcacttgctc atatcaaadc atcggagcga tatcgattgg cttattgggt ggattttggg 480
 cacagcgctc aaggatgcct tgggaagtac acttgctgtt atgaagaaac atccgaaadc 540
 cttccaatta ttgggctggn ccatgttgtt tgcagaatac cccttttttg gaaaaggact 600
 gggcaaagga tgaaaagaca ttgaaatggg ggcccccaaa ggttgaanga cttccccaga 660
 catttgggcn accctttttg tttaaggacc cccttaccga acaaaactcc aacaactcaa 720
 ggagtatctg ttcacaggnt tgcaacacca agaaatgnat gatcacgtca aagggtattgt 780
 acac 784

<210> 20
 <211> 146
 <212> PRT
 <213> Oryza sativa

<220>
 <221> UNSURE
 <222> (130)
 <223> Xaa = any amino acid

<400> 20
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 20 25 30
 Arg Pro Phe Ser Lys Ser Leu Tyr Arg Arg Ile Asn Arg Phe Leu Ala
 35 40 45

Glu Leu Leu Trp Leu Gln Leu Val Trp Leu Val Asp Trp Trp Ala Gly
 50 55 60
 Val Lys Ile Gln Leu His Ala Asp Asp Glu Thr Tyr Lys Ala Met Gly
 65 70 75 80
 Asn Glu His Ala Leu Val Ile Ser Asn His Arg Ser Asp Ile Asp Trp
 85 90 95
 Leu Ile Gly Trp Ile Leu Gly Thr Ala Leu Lys Asp Ala Leu Gly Ser
 100 105 110
 Thr Leu Ala Val Met Lys Lys His Pro Lys Ser Phe Gln Leu Leu Gly
 115 120 125
 Trp Xaa Met Leu Phe Ala Glu Tyr Pro Phe Leu Gly Lys Gly Leu Gly
 130 135 140
 Lys Gly
 145

<210> 21
 <211> 584
 <212> DNA
 <213> Glycine max

<220>
 <221> unsure
 <222> (17)..(18)
 <223> n = a, c, g, or t

<220>
 <221> unsure
 <222> (33)
 <223> n = a, c, g, or t

<220>
 <221> unsure
 <222> (38)..(39)
 <223> n = a, c, g, or t

<220>
 <221> unsure
 <222> (519)
 <223> n = a, c, g, or t

<220>
 <221> unsure
 <222> (543)
 <223> n = a, c, g, or t

<220>
 <221> unsure
 <222> (546)
 <223> n = a, c, g, or t

<220> -
 <221> unsure
 <222> (575)
 <223> n = a, c, g, or t

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ttgcagcagc ggccgtgggtg gtaccattgg gcctgctctt cttcgcctcc ggcctccttg 180
ttaatctcat tcaggcaata tgctatgtcg tcgtaaggcc ggtgtcgaaa agtttgtaca 240
gaaggatcaa ccgggtagta gcagagctct tgtggctgga gcttgtatgg cttattgatt 300
gggtgggcagg agttaaggtc caaatattca cagatcatga aacctttcgt ttaatgggta 360
aagagcatgc acttgtgata agcaatcaca gaagtgatat tgattggctt gttggatggg 420
tttcagctca gcgttcaggt tgtcttggca gcactctaag ctgtgatgaa gaaatcttca 480
aagtttctgc cggtcattgg ctgggtcaatg tggttttcng agtaaccttt tctggagaag 540
aanttnggcc aaagatgaaa gccattaaa gtcangcatc ccgg 584

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<210> 22
<211> 116
<212> PRT
<213> Glycine max

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<400> 22
Met Ala Ile Ala Ala Ala Val Val Val Pro Leu Gly Leu Leu Phe
  1             5             10             15

Phe Ala Ser Gly Leu Leu Val Asn Leu Ile Gln Ala Ile Cys Tyr Val
          20             25             30

Val Val Arg Pro Val Ser Lys Ser Leu Tyr Arg Arg Ile Asn Arg Val
          35             40             45

Val Ala Glu Leu Leu Trp Leu Glu Leu Val Trp Leu Ile Asp Trp Trp
          50             55             60

Ala Gly Val Lys Val Gln Ile Phe Thr Asp His Glu Thr Phe Arg Leu
          65             70             75             80

Met Gly Lys Glu His Ala Leu Val Ile Ser Asn His Arg Ser Asp Ile
          85             90             95

Asp Trp Leu Val Gly Trp Val Ser Ala Gln Arg Ser Gly Cys Leu Gly
          100            105            110

Ser Thr Leu Ser
          115

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<210> 23
<211> 570
<212> DNA
<213> Triticum aestivum

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<220>
<221> unsure
<222> (510)
<223> n = a, c, g, or t

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<220>
<221> unsure
<222> (516)
<223> n = a, c, g, or t

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<220>
<221> unsure

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<222> (518)

<223> n = a, c, g, or t

<400> 23

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cctcctcttc ctctctctccg gcctcgtcgt caacactgtc caggccgtat tgttcttgac 120
gataaggcca ttctcgaagc gattgtaccg gcagatcaac gtattcctgg ccgagttggt 180
gtggcttcag ctgatctggc ttgtggactg gtgggcaggt attaaggtac aggtgtatgc 240
ggatccagaa acttggaac taatgggcaa agagcacgcc cttctcatat ccaatcatcg 300
aagtgcatt gattggctgg ttggatggat tttagcacag cgttcaggat gtcttggaag 360
cgcaatagct ataatgaaga aatcctcaaa gttccttcca gttattgggt ggtccatgtg 420
gtttgcagaa tactcttttg gagagaactg gcaaaggatg aaaaacacta aatcgggtct 480
caaggtgaaa actccagata ttggctgcn tttgtnangg tcaaattact cacaaacttt 540
acagtaagaa atcatccaag ggttgcacgc 570
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<210> 24

<211> 160

<212> PRT

<213> *Triticum aestivum*

<400> 24

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Met Ala Ile Pro Leu Val Leu Val Leu Leu Pro Leu Gly Leu Leu Phe
  1              5              10              15

Leu Leu Ser Gly Leu Val Val Asn Thr Val Gln Ala Val Leu Phe Leu
      20              25              30

Thr Ile Arg Pro Phe Ser Lys Arg Leu Tyr Arg Gln Ile Asn Val Phe
      35              40              45

Leu Ala Glu Leu Leu Trp Leu Gln Leu Ile Trp Leu Val Asp Trp Trp
      50              55              60

Ala Gly Ile Lys Val Gln Val Tyr Ala Asp Pro Glu Thr Trp Lys Leu
      65              70              75              80

Met Gly Lys Glu His Ala Leu Leu Ile Ser Asn His Arg Ser Asp Ile
      85              90              95

Asp Trp Leu Val Gly Trp Ile Leu Ala Gln Arg Ser Gly Cys Leu Gly
      100             105             110

Ser Ala Ile Ala Ile Met Lys Lys Ser Ser Lys Phe Leu Pro Val Ile
      115             120             125

Gly Trp Ser Met Trp Phe Ala Glu Tyr Ser Phe Gly Glu Asn Trp Gln
      130             135             140

Arg Met Lys Asn Thr Lys Ser Gly Leu Lys Val Lys Thr Pro Asp Ile
      145             150             155             160
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<210> 25

<211> 1337

<212> DNA

<213> *Catalpa speciosa*

<400> 25

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atcaccccaa tatcgaagac tatcttccat ccggatccat tcaagagcct cacggcaagc 120
tccgcctgcg tgatttgcct gatatttcac caactctaac tgaggcagct ggtgccattg 180
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ttgatgactc cttcacgaga tgcttcaagt caaatccgcc agaaccctgg aactggaaca 240
tatatttgtt tcctttgtgg tgcttaggag ttgttgtcag atatggtctt cttttccctt 300
taagggtaat agtggtgaca ataggatgga ttatatcttct ctcagtctat ttccctgtgc 360
atttcctgtt aaaagggcat gacaaattga gaaaaaatt agagagaggt ctagtggagt 420
tgatgtgcag tttttttgtt gcatcatgga ctgggggtgt caagtacat ggtccgcggc 480
ccagcatgcg gcctaagcag gtttttgtgg ctaatcacac atccatgatt gatttcattg 540
ttttggaaca aatgactgca tttgcagtga ttatgcagaa gcatcctggg tgggtaggac 600
tattgcagag cactattttg gagagtctag gatgtatctg gttcaaccgg tcagagtcca 660
aggaccgtga aattgttgca aaaaagctaa gagatcatgt ccatggcgct gataataatc 720
ctcttcttat attcccggaa ggaacatgtg tgaataacca ctacactgtg atgtttaaga 780
agggtgcatt tgaacttgga tgcactgtct gtccaatcgc aatcaagtat aacaagattt 840
ttgtggatgc cttctggaac agcagaaagc aatcctttac aatgcacttg ttgcagctta 900
tgacatcctg ggctgttgct tgtgatgttt ggtacctgga gcctcaaaat ctaaaacctg 960
gggaaacacc aattgaattt gctgagaggg tgagggggcat tatttctgtt cgagcaggcc 1020
ttaagaaggt gccgtgggat ggatatttga agtactctcg cccagccca aagcatcgtg 1080
agcgaaagca acaaagcttc gcagagtcag ttctccatca cctggaagag aaatagattg 1140
aagataaata attttgttat ttactgtctt caatttgta gatcaagttt gttagctgtt 1200
ttgaaattca atcttatttg tcactataaa gaggatttca gttcctcaat tgacataatg 1260
aaattccttt gatacgtcgt tgaagaggaa aatacaatat gaagtgttga aaaaaaaaaa 1320
aaaaaaaaaa aaaaaaa 1337

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<210> 26
<211> 371
<212> PRT
<213> Catalpa speciosa

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<400> 26
Met Ser Lys Leu Lys Thr Ser Ser Ser Glu Leu Asp Leu Asp His Pro
  1              5              10              15

Asn Ile Glu Asp Tyr Leu Pro Ser Gly Ser Ile Gln Glu Pro His Gly
      20              25              30

Lys Leu Arg Leu Arg Asp Leu Leu Asp Ile Ser Pro Thr Leu Thr Glu
      35              40              45

Ala Ala Gly Ala Ile Val Asp Asp Ser Phe Thr Arg Cys Phe Lys Ser
      50              55              60

Asn Pro Pro Glu Pro Trp Asn Trp Asn Ile Tyr Leu Phe Pro Leu Trp
      65              70              75              80

Cys Leu Gly Val Val Val Arg Tyr Gly Leu Leu Phe Pro Leu Arg Val
      85              90              95

Ile Val Leu Thr Ile Gly Trp Ile Ile Phe Leu Ser Cys Tyr Phe Pro
      100             105             110

Val His Phe Leu Leu Lys Gly His Asp Lys Leu Arg Lys Lys Leu Glu
      115             120             125

Arg Gly Leu Val Glu Leu Met Cys Ser Phe Phe Val Ala Ser Trp Thr
      130             135             140

Gly Val Val Lys Tyr His Gly Pro Arg Pro Ser Met Arg Pro Lys Gln
      145             150             155             160

Val Phe Val Ala Asn His Thr Ser Met Ile Asp Phe Ile Val Leu Glu
      165             170             175

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Gln Met Thr Ala Phe Ala Val Ile Met Gln Lys His Pro Gly Trp Val
 180 185 190
 Gly Leu Leu Gln Ser Thr Ile Leu Glu Ser Leu Gly Cys Ile Trp Phe
 195 200 205
 Asn Arg Ser Glu Ser Lys Asp Arg Glu Ile Val Ala Lys Lys Leu Arg
 210 215 220
 Asp His Val His Gly Ala Asp Asn Asn Pro Leu Leu Ile Phe Pro Glu
 225 230 235 240
 Gly Thr Cys Val Asn Asn His Tyr Thr Val Met Phe Lys Lys Gly Ala
 245 250 255
 Phe Glu Leu Gly Cys Thr Val Cys Pro Ile Ala Ile Lys Tyr Asn Lys
 260 265 270
 Ile Phe Val Asp Ala Phe Trp Asn Ser Arg Lys Gln Ser Phe Thr Met
 275 280 285
 His Leu Leu Gln Leu Met Thr Ser Trp Ala Val Val Cys Asp Val Trp
 290 295 300
 Tyr Leu Glu Pro Gln Asn Leu Lys Pro Gly Glu Thr Pro Ile Glu Phe
 305 310 315 320
 Ala Glu Arg Val Arg Gly Ile Ile Ser Val Arg Ala Gly Leu Lys Lys
 325 330 335
 Val Pro Trp Asp Gly Tyr Leu Lys Tyr Ser Arg Pro Ser Pro Lys His
 340 345 350
 Arg Glu Arg Lys Gln Gln Ser Phe Ala Glu Ser Val Leu His His Leu
 355 360 365
 Glu Glu Lys
 370

<210> 27
 <211> 1582
 <212> DNA
 <213> Zea mays

<400> 27
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 ggaccggcca aacctggagg actacctccc gcccgactcg ctcccgagg aggcgccccg 180
 gaatctccat ctgcgcgatc tgctggacat ctgcgcggtg ctcaccgagg cagcgggtgc 240
 cattgtcgat gactccttca cacggtgctt taagtcaaat tctccagagc catggaattg 300
 gaacatatat ctgttcccct tatggtgctt tgggtgtagta ataagatatg gattactctt 360
 cccactgagg tccttaacgc ttgcaatagg atgggttagca ttttttgctg ccttttttcc 420
 tgtccatttc ctattgaaag gtcaagacaa gttgagaagt aaaattgaga ggaagtgggt 480
 tgaaatgatg tgcagtgtt ttgttgcttc atggactgga gttatcaagt atcatggacc 540
 acgccaagc acacgacctc atcagggtatt cggttgcaaac catacatcga tgatagattt 600
 cattattctg gagcaaatga cagcatttgc tgtcatcatg cagaagcatc ctggatgggt 660
 tggatttatt cagaagacta tcttgaaaag tgtcggttgc atctggttta atcgtaatga 720
 tctccgggac cgtgaagtta cggcacggaa gttacgtgat catgttcaac aaccagacaa 780
 caatcctctg ttgatttttc cggaaggaac ttgtgtgaac aaccagtaca cggatcatgtt 840
 caagaagggg gcctttgagc ttggctgcgc tgtatgtcca atagctatca agtacaataa 900

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aatatttgtt gatgcctttt ggaacagtaa gaagcaatct tttacaatgc acttgggtccg 960
gctgatgaca tcatgggctg ttgtgtgtga tgtttggtac ttacctcctc aatatctgag 1020
ggaggggagag acggcaattg catttgctga gagagtaagg gacatgatag ctgctagagc 1080
tggaactaaag aagggttcctt gggatggcta tctgaaacac aaccgtccta gtcccaaaca 1140
cactgaagag aaacaacgca tatttgccga atctgtcttg atgagactgg aggagaaatg 1200
aagggacgta aagccgtaca agtgcacttc gttaggggtt tacatgcagc taccttgtaa 1260
ttcggttggc ttccagaaaa aaaaaagtga gcctgggaca cgtcaagtga ccacctcagt 1320
tttgttgtaa atttgttact agtttgatag gattattagt atgtacttat caggaaaaga 1380
attctcagta tgtgttttgg ctgccattc aatgataggt cagtgattaa caccgaagca 1440
ttgtgctctc gtgagatgct gtgttggctc taatatattg acggtactgt accatgggtt 1500
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aaaaaaaaaa aaaaaaaaaa ag 1582

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<210> 28
<211> 371
<212> PRT
<213> Zea mays

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<400> 28
Met Ala Thr Ser Ser Val Ala Ala Asp Met Glu Leu Asp Arg Pro Asn
 1             5             10             15

Leu Glu Asp Tyr Leu Pro Pro Asp Ser Leu Pro Gln Glu Ala Pro Arg
      20             25             30

Asn Leu His Leu Arg Asp Leu Leu Asp Ile Ser Pro Val Leu Thr Glu
      35             40             45

Ala Ala Gly Ala Ile Val Asp Asp Ser Phe Thr Arg Cys Phe Lys Ser
      50             55             60

Asn Ser Pro Glu Pro Trp Asn Trp Asn Ile Tyr Leu Phe Pro Leu Trp
      65             70             75             80

Cys Phe Gly Val Val Ile Arg Tyr Gly Leu Leu Phe Pro Leu Arg Ser
      85             90             95

Leu Thr Leu Ala Ile Gly Trp Leu Ala Phe Phe Ala Ala Phe Phe Pro
      100            105            110

Val His Phe Leu Leu Lys Gly Gln Asp Lys Leu Arg Ser Lys Ile Glu
      115            120            125

Arg Lys Leu Val Glu Met Met Cys Ser Val Phe Val Ala Ser Trp Thr
      130            135            140

Gly Val Ile Lys Tyr His Gly Pro Arg Pro Ser Thr Arg Pro His Gln
      145            150            155            160

Val Phe Val Ala Asn His Thr Ser Met Ile Asp Phe Ile Ile Leu Glu
      165            170            175

Gln Met Thr Ala Phe Ala Val Ile Met Gln Lys His Pro Gly Trp Val
      180            185            190

Gly Phe Ile Gln Lys Thr Ile Leu Glu Ser Val Gly Cys Ile Trp Phe
      195            200            205

Asn Arg Asn Asp Leu Arg Asp Arg Glu Val Thr Ala Arg Lys Leu Arg
      210            215            220

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Asp His Val Gln Gln Pro Asp Asn Asn Pro Leu Leu Ile Phe Pro Glu
 225 230 235 240
 Gly Thr Cys Val Asn Asn Gln Tyr Thr Val Met Phe Lys Lys Gly Ala
 245 250 255
 Phe Glu Leu Gly Cys Ala Val Cys Pro Ile Ala Ile Lys Tyr Asn Lys
 260 265 270
 Ile Phe Val Asp Ala Phe Trp Asn Ser Lys Lys Gln Ser Phe Thr Met
 275 280 285
 His Leu Val Arg Leu Met Thr Ser Trp Ala Val Val Cys Asp Val Trp
 290 295 300
 Tyr Leu Pro Pro Gln Tyr Leu Arg Glu Gly Glu Thr Ala Ile Ala Phe
 305 310 315 320
 Ala Glu Arg Val Arg Asp Met Ile Ala Ala Arg Ala Gly Leu Lys Lys
 325 330 335
 Val Pro Trp Asp Gly Tyr Leu Lys His Asn Arg Pro Ser Pro Lys His
 340 345 350
 Thr Glu Glu Lys Gln Arg Ile Phe Ala Glu Ser Val Leu Met Arg Leu
 355 360 365
 Glu Glu Lys
 370

<210> 29
 <211> 1422
 <212> DNA
 <213> *Oryza sativa*

<400> 29
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 tcccatccga ctgcgtgccg caggagttcc ccaggaatct ccatctgcgc gatctgctgg 180
 acatctcgcc ggtgctcact gaagcagcgg gcgccatcgt cgatgattca ttcacacggt 240
 gctttaagtc aaattctcca gagccatgga attggaacat ttatttattc ccattgtggt 300
 gcttgggagt agtgataaga tacggaatac tattcccgtc gaggggccta actcttctag 360
 ttggatgggt agcattcttt gctgcctttt ttcctgtaca tttcttattg aaaggtcaaa 420
 agatgagaag taaaatagag agaaagctgg ttgaaatgat gtgcagtgtt tttgttgctt 480
 cttggactgg agtgatcaag tatcatgggc ctgcaccaag cacacggcct catcagggtat 540
 ttgttgcaaa ccatacatcg atgatagatt tcattattct ggagcagatg acagcatttg 600
 ctgtcattat gcaaaagcat cctggatggg ttggatttat tcagaagact atcttggaag 660
 gtgttggttg catctggttt aatcgcaatg atctcaagga tcgtgaagtg gttgcaaaaa 720
 agttacgaga tcatgttcaa catccagaca gcaatcctct cctgattttc cctgaaggaa 780
 cttgtgttaa caaccagtac actgtcatgt tcaagaaggg tgcttttgag cttggctgtg 840
 ctgtatgccc aatagctatc aaatacaata aaatatattg tgatgccttc tggaaatagta 900
 agaagcaatc gtttacaatg cacttggtta ggcttatgac atcatgggca gttgtgtgtg 960
 atgtatggta cttggagcct cagtatctga gggatggaga aacagcaatt gaatttgctg 1020
 aaagagtaag agacatgata gctgctagag ctgggtcttaa gaaggttccg tgggacgggt 1080
 atctgaaaca caaccgccct agtcccaaac aactgaaga gaagcagcgc atctttgctg 1140
 actctgtgtt gcggagactg gaggaaagct aaacagatat caatcaactc tgggtgctcat 1200
 tggtgagtcc aggttactaa tgcctagtg tgtatctggg tctctggagt atgtggaaat 1260
 taccactgca gttttgttgt aaattgtttg cagcttgaca gaatcaacat ttaatagcct 1320
 gtattagcca agattttatg attggttagg gttaacacat aaatattata ccttcccaaa 1380

tgatgtatta atacttaccc tcaaaaaaaaaa aaaaaaaaaa ac

1422

<210> 30

<211> 370

<212> PRT

<213> Oryza sativa

<400> 30

Met Ala Thr Ser Ser Val Ala Gly Asp Ile Glu Leu Asp Arg Pro Asn
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Leu Glu Asp Tyr Leu Pro Ser Asp Ser Leu Pro Gln Glu Phe Pro Arg
20 25 30

Asn Leu His Leu Arg Asp Leu Leu Asp Ile Ser Pro Val Leu Thr Glu
35 40 45

Ala Ala Gly Ala Ile Val Asp Asp Ser Phe Thr Arg Cys Phe Lys Ser
50 55 60

Asn Ser Pro Glu Pro Trp Asn Trp Asn Ile Tyr Leu Phe Pro Leu Trp
65 70 75 80

Cys Leu Gly Val Val Ile Arg Tyr Gly Ile Leu Phe Pro Leu Arg Gly
85 90 95

Leu Thr Leu Leu Val Gly Trp Leu Ala Phe Phe Ala Ala Phe Phe Pro
100 105 110

Val His Phe Leu Leu Lys Gly Gln Lys Met Arg Ser Lys Ile Glu Arg
115 120 125

Lys Leu Val Glu Met Met Cys Ser Val Phe Val Ala Ser Trp Thr Gly
130 135 140

Val Ile Lys Tyr His Gly Pro Arg Pro Ser Thr Arg Pro His Gln Val
145 150 155 160

Phe Val Ala Asn His Thr Ser Met Ile Asp Phe Ile Ile Leu Glu Gln
165 170 175

Met Thr Ala Phe Ala Val Ile Met Gln Lys His Pro Gly Trp Val Gly
180 185 190

Phe Ile Gln Lys Thr Ile Leu Glu Ser Val Gly Cys Ile Trp Phe Asn
195 200 205

Arg Asn Asp Leu Lys Asp Arg Glu Val Val Ala Lys Lys Leu Arg Asp
210 215 220

His Val Gln His Pro Asp Ser Asn Pro Leu Leu Ile Phe Pro Glu Gly
225 230 235 240

Thr Cys Val Asn Asn Gln Tyr Thr Val Met Phe Lys Lys Gly Ala Phe
245 250 255

Glu Leu Gly Cys Ala Val Cys Pro Ile Ala Ile Lys Tyr Asn Lys Ile
260 265 270

Phe Val Asp Ala Phe Trp Asn Ser Lys Lys Gln Ser Phe Thr Met His
 275 280 285

Leu Val Arg Leu Met Thr Ser Trp Ala Val Val Cys Asp Val Trp Tyr
 290 295 300

Leu Glu Pro Gln Tyr Leu Arg Asp Gly Glu Thr Ala Ile Glu Phe Ala
 305 310 315 320

Glu Arg Val Arg Asp Met Ile Ala Ala Arg Ala Gly Leu Lys Lys Val
 325 330 335

Pro Trp Asp Gly Tyr Leu Lys His Asn Arg Pro Ser Pro Lys His Thr
 340 345 350

Glu Glu Lys Gln Arg Ile Phe Ala Asp Ser Val Leu Arg Arg Leu Glu
 355 360 365

Glu Ser
 370

<210> 31
 <211> 1392
 <212> DNA
 <213> Sorghum

<400> 31
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 gcacgcggtg ccatagtcga tgattcattc acgcgctgct ttaagtcgaa ttctccagaa 120
 ccatggaact ggaacatata tttgttcctt ttatgggtgct tcgggtgtagt aattcgatat 180
 ggattactct tcccactgag gtccttaacg cttgcaatag gatgggttagc attttttgct 240
 gcctttttcc ccgtgcattt cctattgaaa ggtcaagaca agttgagaaa taaaattgag 300
 aggaagtggg ttgaaatgat gtgcagtggt tttgttgctt catggactgg agtgatcaag 360
 taccatggac cacgcccgaag cacacgacct catcaggtat ttgttgcaaa ccatacatca 420
 atgatagatt tcattattct ggagcaaagt acagcatttg ctgtcatcat gcagaagcat 480
 cctggatggg ttggatttat tcagaagact atcttgaaa gtgtgggttg catctgggtt 540
 aaccgtaatg atctccggga tcgtgaagtt acggcacgga agttgcgtga tcatgttcaa 600
 catccagaca aaaaccctct cttgattttc ccagaaggaa cttgtgttaa caaccagtat 660
 acggtcatgt tcaagaaggg tgcctttgag cttgggtgtg ctgtctgtcc aatagctatc 720
 aaatacaata aaatattttg tgatgccttt tggaaacagta agaagcaatc ttttacgatg 780
 cacttggtcc ggttgatgac atcatgggct gttgtgtgtg atgtttggta cttggagcct 840
 caatatctga gggagggaga gactgcaatt gcgtttgctg agagagtaag ggacatgata 900
 gcagctagag ctggtcctta gaaggtcccg tgggatggct atctgaaaca caaccgccct 960
 agtcccaaac acaccgaaga gaagcaacgc atattcgccg aatctgtctt gaggagacta 1020
 gaggagaaat gaagagacat caaacactac aagcgcattt ggtagtggt ttaccgttca 1080
 gctacctgtt aattcggttg gctccccgaa aaaaaaaagt ccgggacacg tcaagtgtccc 1140
 agctcagttt tggtgtaaat ttattagaaa tttgacagaa ttggtagtgt gaacttacca 1200
 agaaaggaag aatagccgca tgtgttgtgg ctgttcattc tatgattggt taggaattga 1260
 cacttgaaac acggtactct attcagaggc tgtgtccgta tttatgaatc gacgatgtaa 1320
 tggttttaat tcatgtgatt attgattcaa taatatgagt agattaaaaa aaaaaaaaaa 1380
 aaaaaaaaaa aa 1392

<210> 32
 <211> 343
 <212> PRT
 <213> Sorghum

<400> 32
 Ala Arg Ala Arg Asn Leu His Leu Arg Asp Leu Leu Asp Ile Ser Pro
 1 5 10 15

Val	Leu	Thr	Glu	Ala	Ala	Gly	Ala	Ile	Val	Asp	Asp	Ser	Phe	Thr	Arg	
			20					25					30			
Cys	Phe	Lys	Ser	Asn	Ser	Pro	Glu	Pro	Trp	Asn	Trp	Asn	Ile	Tyr	Leu	
		35					40					45				
Phe	Pro	Leu	Trp	Cys	Phe	Gly	Val	Val	Ile	Arg	Tyr	Gly	Leu	Leu	Phe	
	50					55					60					
Pro	Leu	Arg	Ser	Leu	Thr	Leu	Ala	Ile	Gly	Trp	Leu	Ala	Phe	Phe	Ala	
	65				70					75					80	
Ala	Phe	Phe	Pro	Val	His	Phe	Leu	Leu	Lys	Gly	Gln	Asp	Lys	Leu	Arg	
				85					90					95		
Asn	Lys	Ile	Glu	Arg	Lys	Leu	Val	Glu	Met	Met	Cys	Ser	Val	Phe	Val	
			100					105					110			
Ala	Ser	Trp	Thr	Gly	Val	Ile	Lys	Tyr	His	Gly	Pro	Arg	Pro	Ser	Thr	
		115					120					125				
Arg	Pro	His	Gln	Val	Phe	Val	Ala	Asn	His	Thr	Ser	Met	Ile	Asp	Phe	
	130					135					140					
Ile	Ile	Leu	Glu	Gln	Met	Thr	Ala	Phe	Ala	Val	Ile	Met	Gln	Lys	His	
145					150					155					160	
Pro	Gly	Trp	Val	Gly	Phe	Ile	Gln	Lys	Thr	Ile	Leu	Glu	Ser	Val	Gly	
				165					170					175		
Cys	Ile	Trp	Phe	Asn	Arg	Asn	Asp	Leu	Arg	Asp	Arg	Glu	Val	Thr	Ala	
			180					185					190			
Arg	Lys	Leu	Arg	Asp	His	Val	Gln	His	Pro	Asp	Lys	Asn	Pro	Leu	Leu	
		195					200					205				
Ile	Phe	Pro	Glu	Gly	Thr	Cys	Val	Asn	Asn	Gln	Tyr	Thr	Val	Met	Phe	
	210					215					220					
Lys	Lys	Gly	Ala	Phe	Glu	Leu	Gly	Cys	Ala	Val	Cys	Pro	Ile	Ala	Ile	
225					230					235					240	
Lys	Tyr	Asn	Lys	Ile	Phe	Val	Asp	Ala	Phe	Trp	Asn	Ser	Lys	Lys	Gln	
				245					250					255		
Ser	Phe	Thr	Met	His	Leu	Val	Arg	Leu	Met	Thr	Ser	Trp	Ala	Val	Val	
			260					265					270			
Cys	Asp	Val	Trp	Tyr	Leu	Glu	Pro	Gln	Tyr	Leu	Arg	Glu	Gly	Glu	Thr	
	275						280					285				
Ala	Ile	Ala	Phe	Ala	Glu	Arg	Val	Arg	Asp	Met	Ile	Ala	Ala	Arg	Ala	
	290					295					300					
Gly	Leu	Lys	Lys	Val	Pro	Trp	Asp	Gly	Tyr	Leu	Lys	His	Asn	Arg	Pro	
305					310					315					320	
Ser	Pro	Lys	His	Thr	Glu	Glu	Lys	Gln	Arg	Ile	Phe	Ala	Glu	Ser	Val	
				325					330					335		

Leu Arg Arg Leu Glu Glu Lys
340

<210> 33
<211> 1466
<212> DNA
<213> Glycine max

<400> 33
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tctattgcca cgttgggacg gaaaagtcta gtttaaccac acgtttgtgg ttgtagtgga 180
agcgtaacga agatgaatgg cattgggaaa ctcaaatcgt cgagttctga attggacctt 240
cacattgaag attacctacc ttctgggatcc agtggttcaac aagaacggca tggcaagctc 300
cgactgtgtg atttgctaga cttttctcct agtctatctg aggcagcacg tgccattgta 360
gatgatacat tcacaagggtg cttcaagtca aatcctccag aaccttgga ctggaatggt 420
tatttggttc ctttggtggtg ctgtggaggt gtggttcgat atttgatttt gttccctatt 480
aggattctag tgttggcatt aggatggatt atatttcttt cagccttcat tccagtgcac 540
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ggaaagcaac aaatattcgc tgagtctgtg ttgcggcgct ttgaggaaaa ataatgtata 1320
tctttttact ttttcagtaa tgattttctc caacccttgt ttgtactcca cttactacta 1380
tgatatacat gtagatctta catgaaattg cctgaaaatt ttccatgacc aaaaaaaaaa 1440
aaaaaaaaact cgagactagt tctctc 1466

<210> 34
<211> 373
<212> PRT
<213> Glycine max

<400> 34
Met Asn Gly Ile Gly Lys Leu Lys Ser Ser Ser Ser Glu Leu Asp Leu
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His Ile Glu Asp Tyr Leu Pro Ser Gly Ser Ser Val Gln Gln Glu Arg
20 25 30
His Gly Lys Leu Arg Leu Cys Asp Leu Leu Asp Ile Ser Pro Ser Leu
35 40 45
Ser Glu Ala Ala Arg Ala Ile Val Asp Asp Thr Phe Thr Arg Cys Phe
50 55 60
Lys Ser Asn Pro Pro Glu Pro Trp Asn Trp Asn Val Tyr Leu Phe Pro
65 70 75 80
Leu Trp Cys Cys Gly Val Val Val Arg Tyr Leu Ile Leu Phe Pro Ile
85 90 95

Arg Ile Leu Val Leu Ala Leu Gly Trp Ile Ile Phe Leu Ser Ala Phe
 100 105 110
 Ile Pro Val His Ser Leu Leu Lys Gly Asn Asp Asp Leu Arg Lys Lys
 115 120 125
 Ile Glu Arg Cys Leu Val Glu Met Met Cys Ser Phe Phe Val Ala Ser
 130 135 140
 Trp Thr Gly Val Val Lys Tyr His Gly Pro Arg Pro Ser Ile Arg Pro
 145 150 155 160
 Lys Gln Val Phe Val Ala Asn His Thr Ser Met Ile Asp Phe Ile Ile
 165 170 175
 Leu Glu Gln Met Thr Ala Phe Ala Val Ile Met Gln Lys His Pro Gly
 180 185 190
 Trp Val Gly Leu Leu Gln Ser Thr Ile Leu Glu Ser Val Gly Cys Ile
 195 200 205
 Trp Phe Asn Arg Thr Glu Ala Lys Asp Arg Glu Ile Val Ala Arg Lys
 210 215 220
 Leu Arg Asp His Val Leu Gly Ala Asn Asn Asn Pro Leu Leu Ile Phe
 225 230 235 240
 Pro Glu Gly Thr Cys Val Asn Asn His Tyr Ser Val Met Phe Lys Lys
 245 250 255
 Gly Ala Phe Glu Leu Gly Cys Thr Ile Cys Pro Val Ala Ile Lys Tyr
 260 265 270
 Asn Lys Ile Phe Val Asp Ala Phe Trp Asn Ser Arg Lys Gln Ser Phe
 275 280 285
 Thr Thr His Leu Leu Gln Leu Met Thr Ser Trp Ala Val Val Cys Asp
 290 295 300
 Val Trp Tyr Leu Glu Pro Gln Asn Leu Lys Pro Gly Glu Thr Pro Ile
 305 310 315 320
 Glu Phe Ala Glu Arg Val Arg Asp Ile Ile Ser His Arg Ala Gly Leu
 325 330 335
 Lys Lys Val Pro Trp Asp Gly Tyr Leu Lys Tyr Ser Arg Pro Ser Pro
 340 345 350
 Lys His Arg Glu Gly Lys Gln Gln Ile Phe Ala Glu Ser Val Leu Arg
 355 360 365
 Arg Phe Glu Glu Lys
 370

<210> 35
 <211> 1384
 <212> DNA
 <213> *Catalpa speciosa*

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<400> 35
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cggctctgaag aggtggaagg acctggggct attgtatcca atcatatata ttatatagat 180
atcctgtatc acatgtcttc ctctttccca agtttcgttt ccaagagatc cgctcgctaaa 240
cttccccttg ttggctcttg gagcaagtgt cttggttgtg tatatgtaca gcgtgagtta 300
aagtcgtcgg atttcaaggg ggtatcaggg gttgtcactg aaagaattca agaagctcat 360
caaaaataagt ttgtccaaa gatgataatt ttcccagaag gcacaactac aaatggggac 420
ttcttccttc cattcaagac tgggtgcattt ttggcaaagg ctccagtact tcctgtcatt 480
ttaagatatt cgtaccagag atttagtccc gcgtgggact ctatttctgg ggctcgccat 540
gtgattcttc ttctctgtca gtttgtaaag tacattgaag tgacacattt gcctgtttat 600
catccgtccg aacaagaaaa ggaagatccc aagcttttcg ctgaaaatgt taggcttctg 660
atggctcgtg agggtaattt gattctttcg gatattggat tggcggagaa acgagtttat 720
catgctgctc tcaatggttt actttgtcaa agataatcca gcttcgctat attgattgta 780
taaagtattt ttttgacttc cataaaacta ataactaagc ccataaatta cgctggaaga 840
ggtcattgat cttcatcgtc tatacgattt ctaactatta tctggacatc ttagttactg 900
cttcagcttt ggttaaggatc ctctaaagct gtctctattt gatacattag gccgtctggc 960
ttaatacaga acgtggaagc cgatgttgta ttaacgacgt tggatgaacat ggagctattg 1020
cttctacttg aaatttgacc atccattatt tgattcttga gacatgaagt tgagaaatta 1080
gagttcgttt gagattagcc ataaatcgca tttctctaac agtttgttct actgggtacg 1140
gtattagttt ccccttgat atagcacaat gcaaatgctg tagttaacta ctttgttttg 1200
atcttctgtt ttgtttgctt tattgcaacg ttaggagttg taaatatcct taaaatctag 1260
ttggattagc atagttaatt gtgaaatatg tagtggtgcc tgagaatggg cttggattgg 1320
aagtccttgct tcttctggga aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1380
aaaa 1384

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<210> 36
<211> 251
<212> PRT
<213> Catalpa speciosa

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<400> 36
Ala Arg Gly Arg Phe Leu Ser Arg Ile Leu Leu Phe Val Phe Gly Phe
 1          5          10         15

Tyr Trp Ile Gly Glu Thr Ser Lys Gly Ile Glu Val Asp Gly Gln Gly
      20          25          30

Asn Asn Glu Ser Ala Ser Arg Asn Arg Ser Glu Glu Val Glu Gly Pro
      35          40          45

Gly Ala Ile Val Ser Asn His Ile Ser Tyr Ile Asp Ile Leu Tyr His
      50          55          60

Met Ser Ser Ser Phe Pro Ser Phe Val Ser Lys Arg Ser Val Ala Lys
      65          70          75          80

Leu Pro Leu Val Gly Leu Val Ser Lys Cys Leu Gly Cys Val Tyr Val
      85          90          95

Gln Arg Glu Leu Lys Ser Ser Asp Phe Lys Gly Val Ser Gly Val Val
      100         105         110

Thr Glu Arg Ile Gln Glu Ala His Gln Asn Lys Phe Ala Pro Lys Met
      115         120         125

Ile Ile Phe Pro Glu Gly Thr Thr Thr Asn Gly Asp Phe Leu Leu Pro
      130         135         140

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Phe Lys Thr Gly Ala Phe Leu Ala Lys Ala Pro Val Leu Pro Val Ile
 145 150 155 160
 Leu Arg Tyr Ser Tyr Gln Arg Phe Ser Pro Ala Trp Asp Ser Ile Ser
 165 170 175
 Gly Ala Arg His Val Ile Leu Leu Leu Cys Gln Phe Val Asn Tyr Ile
 180 185 190
 Glu Val Thr His Leu Pro Val Tyr His Pro Ser Glu Gln Glu Lys Glu
 195 200 205
 Asp Pro Lys Leu Phe Ala Glu Asn Val Arg Leu Leu Met Ala Arg Glu
 210 215 220
 Gly Asn Leu Ile Leu Ser Asp Ile Gly Leu Ala Glu Lys Arg Val Tyr
 225 230 235 240
 His Ala Ala Leu Asn Gly Leu Leu Cys Gln Arg
 245 250

<210> 37
 <211> 1042
 <212> DNA
 <213> Triticum aestivum

<400> 37
 gcacgagcag gggttgagga gggaggccgt gctgcgtgct ggccgcgtgt tgtcgcgggc 60
 aatgctgttc gtgttcgggt tctactggat ccccggtgcc gatcgaagct tccccaatgc 120
 cgaggatgta cctaaagatc actatgaaga actggaaaga ccaggggcca ttgtatctaa 180
 tcatgtgtca tatgtggaca ttctttatca tatgtcagct tcttctccga gttttgttgc 240
 taagaactca gtgtccaagt tgccgttgat tgggtctcata agcaaagtgc ttgggtgcat 300
 ttttgttcaa cgagaatcca aatgttcaga ttctaaagggt gtctcagggt ctgtaactga 360
 aaggctccat gaggtttcac aagacgagaa ttcccctatg atcttactct ttctgaggg 420
 tactactacg aatggggatt accttctccc atttaagaca ggagcctttc ttgcaagggc 480
 accattgcaa cctgtaattt tgagatatcc ttacaggaga tttagtccag cctgggactc 540
 catggatggg gcacgtcatg tgtttttgct cctctgtcaa ttgcaaatt acatagaggt 600
 ggttcgcttg cctgtatact atccttctga gcaagaaaag caggatccta gagtctatgc 660
 caacaacgta agaaaattgc ttgcgactga gggtaattta gttctgtcta atcttgggct 720
 ggctgaaaag cgtgtgtatc atgcggcact taatggtaat agtcctcgtg ctctgcatca 780
 gaaagatgat tgaaagccct tgcatactc tctgtacact atctgttgag gtgattgtaa 840
 gaatgtatgc caactttagc tgatcatgtg attcatgggt tctctgtttg aggagtatgt 900
 tgattgatga aaacattata cctattttga gatgaattcc ctccattatac tacattgtat 960
 agaaaccatt aaacattata gttcaataat aatgtctggc ataattgttt tgcttgttca 1020
 aaaaaaaaaa aaaaaaaaaa aa 1042

<210> 38
 <211> 261
 <212> PRT
 <213> Triticum aestivum

<400> 38
 Gln Gly Leu Arg Arg Glu Ala Val Leu Arg Ala Gly Arg Val Leu Ser
 1 5 10 15
 Arg Ala Met Leu Phe Val Phe Gly Phe Tyr Trp Ile Pro Val Ser Asp
 20 25 30
 Arg Ser Phe Pro Asn Ala Glu Asp Val Pro Lys Asp His Tyr Glu Glu
 35 40 45

Leu Glu Arg Pro Gly Ala Ile Val Ser Asn His Val Ser Tyr Val Asp
 50 55 60
 Ile Leu Tyr His Met Ser Ala Ser Ser Pro Ser Phe Val Ala Lys Asn
 65 70 75 80
 Ser Val Ser Lys Leu Pro Leu Ile Gly Leu Ile Ser Lys Cys Leu Gly
 85 90 95
 Cys Ile Phe Val Gln Arg Glu Ser Lys Cys Ser Asp Ser Lys Gly Val
 100 105 110
 Ser Gly Ala Val Thr Glu Arg Leu His Glu Val Ser Gln Asp Glu Asn
 115 120 125
 Ser Pro Met Ile Leu Leu Phe Pro Glu Gly Thr Thr Thr Asn Gly Asp
 130 135 140
 Tyr Leu Leu Pro Phe Lys Thr Gly Ala Phe Leu Ala Arg Ala Pro Leu
 145 150 155 160
 Gln Pro Val Ile Leu Arg Tyr Pro Tyr Arg Arg Phe Ser Pro Ala Trp
 165 170 175
 Asp Ser Met Asp Gly Ala Arg His Val Phe Leu Leu Leu Cys Gln Phe
 180 185 190
 Ala Asn Tyr Ile Glu Val Val Arg Leu Pro Val Tyr Tyr Pro Ser Glu
 195 200 205
 Gln Glu Lys Gln Asp Pro Arg Val Tyr Ala Asn Asn Val Arg Lys Leu
 210 215 220
 Leu Ala Thr Glu Gly Asn Leu Val Leu Ser Asn Leu Gly Leu Ala Glu
 225 230 235 240
 Lys Arg Val Tyr His Ala Ala Leu Asn Gly Asn Ser Pro Arg Ala Leu
 245 250 255
 His Gln Lys Asp Asp
 260

<210> 39
 <211> 1459
 <212> DNA
 <213> Zea mays

<220>
 <221> unsure
 <222> (203)
 <223> n = a, c, g, or t

<400> 39
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 attgtttcgt cagagtctca tgatgcccta ccatttggtg gaacaattat tcgagcgatg 120
 cagggtatat atgttgacag attctcacca gcttctcgga aggctgctgt aaatgaaata 180
 aagagaaagg cagcttgcaa tancttcccg cgggtcctgt tattccctga aggcaccaca 240
 acaaatggga gattcctgat ttcgttccaa catggtgcgt tcatacctgg ctaccctggt 300
 caacctgttg ttgtccatta tccacatgtg cactttgatc aatcatgggg aaatatatcg 360

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ttattaaagc tcatgttcaa gatgttcaca cagtttcata atttcatgga ggtagagtag 420
cttctgttg tctaccctcc tgagatcaag caagagaatg cccttcattt tgcagaggat 480
accagctatg ctatggcacg tgccctgaat gccttgccga cttattattc atggcgattc 540
tatgattatg gcacgagcag tagaagctgg aaaggtgaac tgctcaaatt atatggtaga 600
aatggcttgg gttaaagatg tttacggtat aagcacagca gaagtgatgg aactattgga 660
acatttcctg gctatgaatc cagataacga tggacgtgtg aaagctgaag atttctgggc 720
tcattttggt ctggattgca gtcctctgtg caagaagata tttcactatt tcgatttaga 780
cattaagggg ttgattacgt tccgtcagtt cttgggtggg tgcgcgcacc tgaggaagca 840
accactgttc cagggttcct gcgagaccgc ctttgagaag tgccgggggtc ctgaaacgtc 900
tgagatctcc agggcacagc tagctgatct cttgcggtta agcatggtgc caccttctga 960
tgataagatg ctggagctgt tcaagacggt cgatgtagat ggcgacgaga agatcagcag 1020
ggacgacttc atggcgtgtc ttgggaggtt cccgttcctg atcgcgttct ttgctgccct 1080
gatcaatggg gaagtgtaca tcgagatagt ctgaatgaat gcctgaggca aagcgatgcc 1140
gcgtaaaagg ctggagctgc cagtgccagg cgtaggcagg ggatccctcc gtttatgcaa 1200
tgtggatacc caccgggtgc tcctccactt tgagaccaa gcaactgtag tattgggtat 1260
tgggttgcac caagtggctg accagtgtag tgcgtcgatt ttgtttagtt gcttcgttcg 1320
aattattatt ggccatttac cgaatctgtt gagatacgcg ctggactagt agattgtcga 1380
tggaactcag aacgcaaata gaaagcatct gtaatctgaa ctaactgaga aaacatttaa 1440
aaaaaaaaa aaaaaaaaaa 1459

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<210> 40

<211> 204

<212> PRT

<213> Zea mays

<220>

<221> UNSURE

<222> (68)

<223> Xaa = any amino acid

<400> 40

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Val Ser Asn His Ile Ser Tyr Ile Glu Pro Ile Phe Phe Phe Tyr Glu
  1                      5                      10                      15

Leu Phe Pro Thr Ile Val Ser Ser Glu Ser His Asp Ala Leu Pro Phe
                20                      25                      30

Val Gly Thr Ile Ile Arg Ala Met Gln Val Ile Tyr Val Asp Arg Phe
                35                      40                      45

Ser Pro Ala Ser Arg Lys Ala Ala Val Asn Glu Ile Lys Arg Lys Ala
  50                      55                      60

Ala Cys Asn Xaa Phe Pro Arg Val Leu Leu Phe Pro Glu Gly Thr Thr
  65                      70                      75                      80

Thr Asn Gly Arg Phe Leu Ile Ser Phe Gln His Gly Ala Phe Ile Pro
                85                      90                      95

Gly Tyr Pro Val Gln Pro Val Val Val His Tyr Pro His Val His Phe
                100                      105                      110

Asp Gln Ser Trp Gly Asn Ile Ser Leu Leu Lys Leu Met Phe Lys Met
  115                      120                      125

Phe Thr Gln Phe His Asn Phe Met Glu Val Glu Tyr Leu Pro Val Val
  130                      135                      140

Tyr Pro Pro Glu Ile Lys Gln Glu Asn Ala Leu His Phe Ala Glu Asp
  145                      150                      155                      160

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Thr Ser Tyr Ala Met Ala Arg Ala Leu Asn Ala Leu Pro Thr Tyr Tyr
 165 170 175

Ser Trp Arg Phe Tyr Asp Tyr Gly Thr Ser Ser Arg Ser Trp Lys Gly
 180 185 190

Glu Leu Leu Lys Leu Tyr Gly Arg Asn Gly Leu Gly
 195 200

<210> 41
 <211> 2115
 <212> DNA
 <213> Oryza sativa

<400> 41
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 cctagccccg cctccctctc cagcgcgctc ctctccgact ccatctcgcc cagccccacc 120
 accaacggcc acgcggggca ccataaccac gacgacgacg acgaggagtc gccaacggtg 180
 tgcggcgggc atggcgagg agggggggac ccgttcgcgt tcctatcgga ggatcgccg 240
 gcgtggtggt cgcccgggg ggtgtccccg gccgaccggt tccgcaacgg gacgccccgg 300
 tgggtcgggg cgtacgagct cgtgagggcg ctggtgtgcg cgccggtggc ggcggcgagg 360
 ctggtgctgt tcgggctctc catcgcggtg gggtagccg ccacgtgggt ggcgctccgc 420
 gggtaggtcg acgtgcggga gcgggcgggc caggagggcg ccggggccat gccggcggtg 480
 cgccgcccgc tcatgtggat cagcgggatc tccgcgcgct gcctctctt ctcttcgga 540
 taccattgga taaggaggaa aggaaaaccc gcgcctagag agcttgacc tatagttgtc 600
 tcaaatacat tatcatacat agaaccata tacttcttct atgagctgtt cccgacaatc 660
 gtttcttcag attctcatga ttccatacca tttgttgga caattatccg agcaatgcag 720
 gttatatatg ttgacagatt ctgcgcagct tcaaggaagt ctgctgtaaa tgaaataaag 780
 gatgtgattt cagagaaagg cggcttgcaa tagcttccca cgtgtcttgt tattcccgga 840
 aggcacgaca acaaattggaa gatttctgat ttctttccaa catggtgcat tcatacctgg 900
 ctaccctgtt caacctgtta ttgtgcgcta tccacatgtg cactttgatc aatcatgggg 960
 aaatatatca ttaggaaagc tcatgttcaa gatgtttacc cagtttcaca atttcatgga 1020
 ggtagagtac ctccctgttg tttaccacc tgagatcaag caagagaatg cccttcattt 1080
 tgcagagaac actagctatg ctatggcaca tgcacttaat gttattccaa cctcttattc 1140
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 ggcactcttg gaagactttt tgtgtatgag ccagacaag gacggacgtg tgaatgcgca 1320
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 cctccgctctg ttttttagagg gatggtttcc aaccgcttca ccgtccatgt agctttctca 1860
 ggcgtgttgg actaaagtgg ctaaccggta tagtgcgcaa tttgttttca tatcgtaaaa 1920
 atatatattt atatccatag aaaagctgtc gcgtgatggc acgctggatt gtgcaatgtg 1980
 gatatgatac tgtacaacat tgggtccaact gggcggtgcac atagaaactc tttttttggg 2040
 ttggtttggg ttggctaact ggatggatga ttacaaactc ctttttgggt aaaaaaaaaa 2100
 aaaaaaaaaa aaaaaa 2115

<210> 42
 <211> 255
 <212> PRT
 <213> Oryza sativa

<400> 42
Met Ala Ser Arg Asn Pro Ser Pro Ala Ser Leu Ser Thr Pro Leu Leu
1 5 10 15
Ser Asp Ser Ile Ser Pro Thr Pro Thr Thr Asn Gly His Ala Gly His
20 25 30
His Asn His Asp Asp Asp Asp Glu Glu Ser Pro Thr Val Cys Gly Gly
35 40 45
Asp Gly Gly Gly Gly Gly Asp Pro Phe Ala Phe Leu Ser Glu Asp Arg
50 55 60
Pro Ala Trp Trp Ser Pro Arg Gly Val Ser Pro Ala Asp Pro Phe Arg
65 70 75 80
Asn Gly Thr Pro Gly Trp Cys Gly Ala Tyr Glu Leu Val Arg Ala Leu
85 90 95
Val Cys Ala Pro Val Ala Ala Ala Arg Leu Val Leu Phe Gly Leu Ser
100 105 110
Ile Ala Val Gly Tyr Ala Ala Thr Trp Val Ala Leu Arg Gly Trp Val
115 120 125
Asp Val Arg Glu Arg Ala Ala Gln Glu Gly Ala Gly Pro Met Pro Ala
130 135 140
Trp Arg Arg Arg Leu Met Trp Ile Thr Arg Ile Ser Ala Arg Cys Ile
145 150 155 160
Leu Phe Ser Phe Gly Tyr His Trp Ile Arg Arg Lys Gly Lys Pro Ala
165 170 175
Pro Arg Glu Leu Ala Pro Ile Val Val Ser Asn His Val Ser Tyr Ile
180 185 190
Glu Pro Ile Tyr Phe Phe Tyr Glu Leu Phe Pro Thr Ile Val Ser Ser
195 200 205
Asp Ser His Asp Ser Ile Pro Phe Val Gly Thr Ile Ile Arg Ala Met
210 215 220
Gln Val Ile Tyr Val Asp Arg Phe Ser Pro Ala Ser Arg Lys Ser Ala
225 230 235 240
Val Asn Glu Ile Lys Asp Val Ile Ser Glu Lys Gly Gly Leu Gln
245 250 255

<210> 43
<211> 2041
<212> DNA
<213> Glycine max

<400> 43
gcacgaggcg acgacgacga cttctccgtg ccgccaccgt ccaccctgga cccgttccgc 60
aaccgcacgc cggcgatcga ggggctctac gaggggcca agacggcgct gtgcctgccg 120
ctggcggcgc tgcggctcgc gctgttcggg ctctgcctcg cggtggggta cgtggcgacg 180
aaggtggcgc tggcagggtg gaaggacaag gagaatccca tgcccaagtg gaggtgtagg 240
gttatgtgga tcacgcgctt gtgcgccaga tgtattctct tctccttgg ctatcagtgg 300

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ataaaacgga aaggaaaacc tgcaccaagg gaaattgctc caataattgt atctaaccat 360
gtttcttata ttgagcctat cttctatttc tatgaattat ttcctaccat tgtggcagct 420
gagtcctcatg actccatacc ttttgttggc accattatta gagcaatgca ggtcatatat 480
gttaacagat tcttaccatc atcaaggaag caggctgtta gggaaataaa gaaatctgct 540
ttcaaggaac tgaataacag agaagggcct cttgtgataa atttcctcga gtactattat 600
ttccccgaggg aacaacaact aatggcagga accttatctc cttccaactt ggtgcattta 660
tccctggata cccaatccag cctgtaatta tacgctatcc tcatgtacac tttgaccaat 720
cctggggtaa tgtttctttg ggaaagctta tgttcagaat gttcactcaa tttcacaact 780
tttttgaggt agaatatctt cctgtcattt atccccctgga tgataaggaa actgctgtac 840
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attcttatgg agacataatg cttcatatga aagcacaaga agcaaaacag gagaaccctt 960
caagttttat ggttgaaatg accaaggtgg aatcattatt tcatatcagc agcacggaag 1020
ctgtggactt tctggataaa ttcttggcca tgaatcctga tcccagtggt cgtgttcaat 1080
atcatgactt cttgagggtt ttaagactta aggcttgccc actatctgca aagatatttt 1140
cattcattga tgtggagaag agtgggacaa ttacgttcag acagttcttg tatggatctg 1200
cccattgtat gtcccaacct gggttcgatc aaacctttga agaagccttt gctggctgtg 1260
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tggttcaggg accatgctga catttagggt ccatgtgggt catgtaaaagt ttgaaccaac 1860
gtgtcaattt gtaacaaaca ttataactgt attttttttc aaagatgtga acatgaagaa 1920
agtaatgtaa tttatttgga aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaactcgag 1980
gggggggccc gttgttttcg aggtcgacgt gctcgataag attgtatcca caccgagcgc 2040
g

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<210> 44
<211> 228
<212> PRT
<213> Glycine max

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<400> 44
Ala Arg Gly Asp Asp Asp Asp Phe Ser Val Pro Pro Pro Ser Thr Leu
 1             5             10             15

Asp Pro Phe Arg Asn Arg Thr Pro Ala Ile Glu Gly Leu Tyr Glu Trp
 20             25             30

Ala Lys Thr Ala Leu Cys Leu Pro Leu Ala Ala Leu Arg Leu Ala Leu
 35             40             45

Phe Gly Leu Cys Leu Ala Val Gly Tyr Val Ala Thr Lys Val Ala Leu
 50             55             60

Ala Gly Trp Lys Asp Lys Glu Asn Pro Met Pro Lys Trp Arg Cys Arg
 65             70             75             80

Val Met Trp Ile Thr Arg Leu Cys Ala Arg Cys Ile Leu Phe Ser Phe
 85             90             95

Gly Tyr Gln Trp Ile Lys Arg Lys Gly Lys Pro Ala Pro Arg Glu Ile
100            105            110

Ala Pro Ile Ile Val Ser Asn His Val Ser Tyr Ile Glu Pro Ile Phe
115            120            125

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Tyr Phe Tyr Glu Leu Phe Pro Thr Ile Val Ala Ala Glu Ser His Asp
 130 135 140
 Ser Ile Pro Phe Val Gly Thr Ile Ile Arg Ala Met Gln Val Ile Tyr
 145 150 155 160
 Val Asn Arg Phe Leu Pro Ser Ser Arg Lys Gln Ala Val Arg Glu Ile
 165 170 175
 Lys Lys Ser Ala Phe Lys Glu Leu Asn Asn Arg Glu Gly Pro Leu Val
 180 185 190
 Ile Asn Phe Leu Glu Tyr Tyr Tyr Phe Pro Arg Glu Gln Gln Leu Met
 195 200 205
 Ala Gly Thr Leu Ser Pro Ser Asn Leu Val His Leu Ser Leu Asp Thr
 210 215 220

Gln Ser Ser Leu
225

<210> 45
 <211> 1502
 <212> DNA
 <213> Zea mays

<400> 45
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 gtcgtcctcc cctcctccct cccctccgc agccccggtg ctggagagca tagaggaact 240
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 cgtgagcgca gcggaggctg cgcggctggc gtttgccgcg gtcgtgctgg tcccgcctcg 360
 tgtcgtggca ggtgttctcg tactcgtggt ctactacctc gtgtgccgcg tgtgcacgct 420
 gcgggtggag gaggaccggg agggcggcga aggggatggg tacgcgcggt tggacgggtg 480
 gaggcgggcg ggggctgtgc ggtgcggccg cgcactcgct cgcgccatgt tgtttgtctt 540
 cggggttctat tggatccgag agtacgacag ccgccttccc aatgctgagg atggccatgt 600
 ggaccagtct aaagaaatcg aaaggcctgg ggcaattgtg tctaatacatg tatcttatgt 660
 ggatattctt tatcacatgt cagcctcttt tcctagtttt gttgctaaga gatcagtggc 720
 tagattgcct ctagttggtc tcataagcaa atgtcttgga tgcatttttg ttcagcggga 780
 gtcgaaaaca ccagatttca aagggtgttc aggtgctgta tctgaaagaa tccatcgtgc 840
 tcatcaacag aaaaatgcac caatgatgct actcttccct gagggcacia ctacaaatgg 900
 ggattatctc cttccattca aaacagggtg ttttcttgca aaggcaccag ttcaaccagt 960
 cattttgaga tatccttaca aaagatttaa tgcagcatgg gattccatgt caggggcacg 1020
 tcatgtattt ctgctgctct gtcaatttgt aaattaccta gaggtgggtcc gcttaccagt 1080
 ttactatcct tctgagcaag aaaaggatga tcctaagctc tatgcaaaca atgtacggaa 1140
 actgatggca gtggagggaa acttgattct ttcagacctt gggctggcgg agaagcgagt 1200
 gtaccatgcc gcaactgaat gtaatatgtc agctcgtgct ttacatcaga aagatgattg 1260
 aaatgccatg ctatcgtgct tccataatac tggcttgctt gtaactgtgt gcttgcttgt 1320
 gcatcgtcat ggttgagagg aatgtcgtga atatactatc cggcataaat ctgtaaagta 1380
 atttaccacac tgtcatagtt cagtaattat gttgggtata ctctacatg gttgggcac 1440
 cgacatttg atcctgtggt caatccatgt gagccttttt tactaaaaaa aaaaaaaaaa 1500
 aa 1502

<210> 46
 <211> 395
 <212> PRT
 <213> Zea mays

<400> 46
Met Ala Pro Asn Glu Ala Ala Ser Ile Thr Thr Pro Ser Glu Pro Glu
1 5 10 15
Ser Val Gly Gly Ser Glu Met Ser Ser Glu Asp Met Ala Ala Ala Ser
20 25 30
Pro Leu Leu Ser Ser Ser Ser Pro Ser Pro Ser Pro Ser Ala Ala Pro
35 40 45
Val Leu Glu Ser Ile Glu Glu Leu Asp Arg Lys Tyr Ala Pro Tyr Ala
50 55 60
Arg Arg Asp Ala Tyr Gly Pro Met Gly Leu Gly Pro Val Ser Ala Ala
65 70 75 80
Glu Ala Ala Arg Leu Ala Phe Ala Ala Val Val Leu Val Pro Leu Arg
85 90 95
Val Val Ala Gly Val Leu Val Leu Val Val Tyr Tyr Leu Val Cys Arg
100 105 110
Val Cys Thr Leu Arg Val Glu Glu Asp Arg Glu Gly Gly Glu Gly Asp
115 120 125
Gly Tyr Ala Arg Leu Asp Gly Trp Arg Arg Ala Gly Ala Val Arg Cys
130 135 140
Gly Arg Ala Leu Ala Arg Ala Met Leu Phe Val Phe Gly Phe Tyr Trp
145 150 155 160
Ile Arg Glu Tyr Asp Ser Arg Leu Pro Asn Ala Glu Asp Gly His Val
165 170 175
Asp Gln Ser Lys Glu Ile Glu Arg Pro Gly Ala Ile Val Ser Asn His
180 185 190
Val Ser Tyr Val Asp Ile Leu Tyr His Met Ser Ala Ser Phe Pro Ser
195 200 205
Phe Val Ala Lys Arg Ser Val Ala Arg Leu Pro Leu Val Gly Leu Ile
210 215 220
Ser Lys Cys Leu Gly Cys Ile Phe Val Gln Arg Glu Ser Lys Thr Pro
225 230 235 240
Asp Phe Lys Gly Val Ser Gly Ala Val Ser Glu Arg Ile His Arg Ala
245 250 255
His Gln Gln Lys Asn Ala Pro Met Met Leu Leu Phe Pro Glu Gly Thr
260 265 270
Thr Thr Asn Gly Asp Tyr Leu Leu Pro Phe Lys Thr Gly Ala Phe Leu
275 280 285
Ala Lys Ala Pro Val Gln Pro Val Ile Leu Arg Tyr Pro Tyr Lys Arg
290 295 300
Phe Asn Ala Ala Trp Asp Ser Met Ser Gly Ala Arg His Val Phe Leu
305 310 315 320

Leu Leu Cys Gln Phe Val Asn Tyr Leu Glu Val Val Arg Leu Pro Val
 325 330 335

Tyr Tyr Pro Ser Glu Gln Glu Lys Asp Asp Pro Lys Leu Tyr Ala Asn
 340 345 350

Asn Val Arg Lys Leu Met Ala Val Glu Gly Asn Leu Ile Leu Ser Asp
 355 360 365

Leu Gly Leu Ala Glu Lys Arg Val Tyr His Ala Ala Leu Asn Gly Asn
 370 375 380

Ser Leu Ala Arg Ala Leu His Gln Lys Asp Asp
 385 390 395

<210> 47
 <211> 1555
 <212> DNA
 <213> Oryza sativa

<400> 47
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 ccctccgacc ccgacgacct cggcggcgcc ggcgaggagg aggaggagag gctcgcctcg 180
 aagccgctgc tctcgtcccc gtccacctat ccttccgcgg ggacggagga gggcgctcgag 240
 gagctggagc tcgaccggag gtacgcgcgg tacgcgaggc gggacgcgta cggggcgatg 300
 ggccgggggcc ccctgggcgc ggccggggcg gggcggtctg cgggtgggcgc cgcggtgctc 360
 ttcccgtctc ggctcgccgc gggcggtgct gtgctcgtcg cctactacct cgtgtgccgc 420
 gtgtgcacgc tgcgtgtgga ggaggaggag cgcgagggtg gcggtggcgc cgcggtgga 480
 gaagtggagg gggacgggta cgcgcggctc gaggggtgga ggcgtgaggg cgtcgtgcgg 540
 tgcggccgcg cgctcgcgcg cgccatgctg ttcgtcttcg gcttctactg gatccgcgag 600
 tacgactgcc gcttccctga tgcgtaggat gagcatcagg aacagtccaa agaattggga 660
 agaccagggg cagtagtata taatcatgta tcttatgtgg atattcttta ccacatgtca 720
 tcttccttcc caagctttgt tgccaagaga tcagtggcca gattgccat ggttggtctc 780
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 ggcgtttcag gtgctgtgac tgagagaatc caacgggctc atcaacagaa gaatttcca 900
 atgatgctac ttttccctga aggcacaact acaaatggtg attatctcct ccctttcaag 960
 acaggagcat ttcttgcaaa agcaccagtg aagccagtca ttttaagata tccttacaag 1020
 agatttagtc cagcatggga ttcgatgtct ggggctcggc atgtatttct gctcctttgt 1080
 caatttgtaa ataacctga ggtgatccat ttgcctgtgt attacccatc tgagcaagag 1140
 aaggaagatc ctaagctgta cgcaataat gtacggaaat tgatggcagt ggaggggaac 1200
 ttgattcttt ctgatcttgg gctagcagag aagcgtgtgt accatgcggc attgaatggt 1260
 aataatagtc tacctcgtgc ttacatcag aaagatgatt gaaatgcctt gccatcgcg 1320
 ttctgtatac tgatgctgag tgacttgctt gtaatatgag tacaagttcc tgggtgtgca 1380
 tgattcctca tgttgagagg agctatgtta atatcctccc agtaaactgt aaaattattt 1440
 gtccatagtg tggttcagta atcatgtcag ttatacatga ttacattcac atgtctggga 1500
 cacacttcac catgcaatcc atcgatgtga gctttataaa aaaaaaaaaa aaaaa 1555

<210> 48
 <211> 404
 <212> PRT
 <213> Oryza sativa

<400> 48
 Met Ala Leu Pro Leu His Asp Ala Thr Thr Ser Pro Ser Asp Pro Asp
 1 5 10 15

Asp Leu Gly Gly Gly Glu Glu Glu Glu Arg Leu Ala Ser Lys
 20 25 30

Pro Leu Leu Ser Ser Pro Ser Thr Tyr Pro Ser Ala Gly Thr Glu Glu
 35 40 45
 Gly Val Glu Glu Leu Glu Leu Asp Arg Arg Tyr Ala Pro Tyr Ala Arg
 50 55 60
 Arg Asp Ala Tyr Gly Ala Met Gly Arg Gly Pro Leu Gly Ala Ala Gly
 65 70 75 80
 Ala Gly Arg Leu Ala Val Gly Ala Ala Val Leu Phe Pro Leu Arg Leu
 85 90 95
 Ala Ala Gly Val Leu Val Leu Val Ala Tyr Tyr Leu Val Cys Arg Val
 100 105 110
 Cys Thr Leu Arg Val Glu Glu Glu Glu Arg Glu Gly Gly Gly Gly Gly
 115 120 125
 Ala Ala Gly Glu Val Glu Gly Asp Gly Tyr Ala Arg Leu Glu Gly Trp
 130 135 140
 Arg Arg Glu Gly Val Val Arg Cys Gly Arg Ala Leu Ala Arg Ala Met
 145 150 155 160
 Leu Phe Val Phe Gly Phe Tyr Trp Ile Arg Glu Tyr Asp Cys Arg Phe
 165 170 175
 Pro Asp Ala Glu Asp Glu His Gln Glu Gln Ser Lys Glu Leu Gly Arg
 180 185 190
 Pro Gly Ala Val Val Ser Asn His Val Ser Tyr Val Asp Ile Leu Tyr
 195 200 205
 His Met Ser Ser Ser Phe Pro Ser Phe Val Ala Lys Arg Ser Val Ala
 210 215 220
 Arg Leu Pro Met Val Gly Leu Ile Ser Lys Cys Leu Gly Cys Ile Phe
 225 230 235 240
 Val Gln Arg Glu Ser Lys Thr Ser Asp Phe Lys Gly Val Ser Gly Ala
 245 250 255
 Val Thr Glu Arg Ile Gln Arg Ala His Gln Gln Lys Asn Ser Pro Met
 260 265 270
 Met Leu Leu Phe Pro Glu Gly Thr Thr Thr Asn Gly Asp Tyr Leu Leu
 275 280 285
 Pro Phe Lys Thr Gly Ala Phe Leu Ala Lys Ala Pro Val Lys Pro Val
 290 295 300
 Ile Leu Arg Tyr Pro Tyr Lys Arg Phe Ser Pro Ala Trp Asp Ser Met
 305 310 315 320
 Ser Gly Ala Arg His Val Phe Leu Leu Leu Cys Gln Phe Val Asn Asn
 325 330 335
 Leu Glu Val Ile His Leu Pro Val Tyr Tyr Pro Ser Glu Gln Glu Lys
 340 345 350

Glu Asp Pro Lys Leu Tyr Ala Asn Asn Val Arg Lys Leu Met Ala Val
 355 360 365

Glu Gly Asn Leu Ile Leu Ser Asp Leu Gly Leu Ala Glu Lys Arg Val
 370 375 380

Tyr His Ala Ala Leu Asn Gly Asn Asn Ser Leu Pro Arg Ala Leu His
 385 390 395 400

Gln Lys Asp Asp

<210> 49
 <211> 1072
 <212> DNA
 <213> Glycine max

<400> 49
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 gacgcgccct ctccagagtc atgctcttca ttttcggcct ttattggatc cccgaatcca 120
 actctgcctc tcaggaagac cggagtcagc ctgaagagtt ggggagacct agcgtataaa 180
 tatctaataca tgtgtcatatc ttggatattt tgtatcacat gtcgtcctca tccccagtt 240
 ttgttgctaa gagatcagtg gctaaaacttc cgctcatttg tctcatcagc aagtgccttg 300
 gttgtgtgta tgttcagcgg gaatcaaagt catcggactt caaggggtgt tcagctgttg 360
 tcaactgacag aattcaagaa gctcatcaga atgagtctgc tccattaatg atgttatctc 420
 cagaaggaac aaccacaaat ggagagttcc tccttccatt caagactggg ggttttttgg 480
 caaaggcacc agtacttctt gtgattttta gatatcatta ccagagattt agccccgcct 540
 gggattccat atctgggggt cgccatgtaa tattttctct gtgtcagttt gtgaattata 600
 tggaggtgat ccgagtacct gtttaccatc cctcacagca ggagatgaat gatcccaaac 660
 tataatgctaa taatgttaga aggttgatgg ctactgaggg taatttgata ctttctgata 720
 ttgggttagc tgaaaaacga atatatcacg ctgctctcaa tggtaataat agcatgccta 780
 gtgtttttgca tcagaaagac gaatgataat ttcattggccc ccgtctcaa tgaaatgtag 840
 ttccagtcga gttttagttt caaacttagt atctgtttat gaatggacag cttgtgtgaa 900
 gggatatagc aaatagtata cattcaccta aacatctgaa tggtaactgt gtaattttct 960
 tgtaaataac gtgaccaata atgttttaat tgctggtgaa ctcaatttga ggcacacaaat 1020
 tcaagatcta taagttaaac tgttcttcgt tcaaaaaaaaa aaaaaaaaaa aa 1072

<210> 50
 <211> 267
 <212> PRT
 <213> Glycine max

<400> 50
 Thr Arg Glu Asp Tyr Ala HisMet Ser Gly Leu Arg Arg Thr Val Ile
 1 5 10 15
 Val Ser Cys Gly Arg Ala Leu Ser Arg Val Met Leu Phe Ile Phe Gly
 20 25 30
 Phe Tyr Trp Ile Pro Glu Ser Asn Ser Ala Ser Gln Glu Asp Arg Ser
 35 40 45
 Gln Pro Glu Glu Leu Gly Arg Pro Ser Val Ile Ile Ser Asn His Val
 50 55 60
 Ser Tyr Leu Asp Ile Leu Tyr His Met Ser Ser Ser Phe Pro Ser Phe
 65 70 75 80


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gaaccttatac tccttccaac ttggngcatt tatccctgga tacccaatcc agcctgtaat 240
tgtacgctat cctcatgtgc actttgacca atcctgggggt catgtttctt tgggaaagct 300
tatgttcaga atgttcactc aatttcacaa cttttttgag gtagaatatc ttcctgtcat 360
ttatcccctg gatgataagg aaactgctgt acattttcgg gagaggacta gccgtgctat 420
cgcaactgca ctaaagtctg tccagacagg acattccttat ggagacataa tgcttcatat 480
gaaagcacaa gaagcaaaac aggagaaccc ctcaagtttt atgggttgaaa tgaccaaggt 540
ggaatcagtg agtccctaaa agcaaataac cttaccattt cctttttttt tctgccattt 600
tcaagtcctt tgtaaattat ctttttcttt aactttttta gtaggatatt taggttaaac 660
cttttgaagt acatgcaaat gccacagtaa ccctttgctt atgccaatgg atgacagaca 720
taagtgaccc aggggtggctg cataatgttg gggccttcta atctatggga aatatgtant 780
gaaagggggag aatattttaa ttgtgatttg tggnaataag gggataatat gacataag 838

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<210> 52
<211> 185
<212> PRT
<213> Glycine max

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<400> 52
Arg Glu Leu Val Ser Ala Ile Phe His Phe Phe Pro Leu Leu Cys Phe
 1          5          10          15

Gln Val Ile Tyr Val Asn Arg Phe Leu Pro Ser Ser Arg Lys Gln Ala
 20          25          30

Val Arg Glu Ile Lys Arg Arg Ala Ser Cys Asn Arg Phe Pro Arg Val
 35          40          45

Leu Leu Phe Pro Glu Gly Thr Thr Thr Asn Gly Arg Asn Leu Ile Ser
 50          55          60

Phe Gln Leu Gly Ala Phe Ile Pro Gly Tyr Pro Ile Gln Pro Val Ile
 65          70          75          80

Val Arg Tyr Pro His Val His Phe Asp Gln Ser Trp Gly His Val Ser
 85          90          95

Leu Gly Lys Leu Met Phe Arg Met Phe Thr Gln Phe His Asn Phe Phe
100          105          110

Glu Val Glu Tyr Leu Pro Val Ile Tyr Pro Leu Asp Asp Lys Glu Thr
115          120          125

Ala Val His Phe Arg Glu Arg Thr Ser Arg Ala Ile Ala Thr Ala Leu
130          135          140

Asn Ala Val Gln Thr Gly His Ser Tyr Gly Asp Ile Met Leu His Met
145          150          155          160

Lys Ala Gln Glu Ala Lys Gln Glu Asn Pro Ser Ser Phe Met Val Glu
165          170          175

Met Thr Lys Val Glu Ser Val Ser Pro
180          185

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<210> 53
<211> 1632
<212> DNA
<213> Oryza sativa

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<400> 53
cttctcgtcg ccggtggatt cgccgccgcc tccgccgccg ccgccggagg aggaggacga 60
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catctcggcc ccgcgagatt ggaagtgagg gcagggcagg gcggcagggg ccatggcggt 180
cccactcgtg ctcgtcgtgc tcccgtcggg cctcctcttc ctccctctccg gcctcatcat 240
caacgccatc caggccgtcc tgtttctctc gataaggccg ttctcgaaga gcttgtaccg 300
gcggatcaac aggttcttgg ccgagctgct gtggcttcag ctggtctggc ttgtggattg 360
gtgggcagga gtttaagatac aactgcatgc tgatgacgaa acttacaagg caatggggaa 420
tgagcatgca cttgtcatat caaataatcg gagcgatatc gattggctta ttgggtggat 480
tttggcacag cgctcaggat gccttggaag tacacttgct gttatgaaga aatcatcgaa 540
attccttcca gttattggct ggtccatgtg gtttgcagaa tacctctttt tggaaaggag 600
ctgggcaaag gatgaaaaga cattgaaatg gggcctccaa aggttgaagg acttccccag 660
accatttttg ctagcccttt ttgttgaggg cactcgcttt actccagcaa agcttctagc 720
agctcaggag tatgctgttt cacagggttt gccagcacc agaaatgtat tgattccacg 780
tacaaagggg tttgtatcag ctgtaactat tatgcgggat tttgttccag ctatttatga 840
tacaacagta attattccaa aagattcacc tcaaccaaca atgctgcgga ttttgaaagg 900
gcaatcttca gtggtacatg ttcgcatgaa acgtcatgca atgagtgaaga tgccaaagtc 960
agaagacgat gtttcaaaat ggtgcaaaga catctttgta gcaaaggatg cttacttga 1020
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atcattgctg gtgactttgt tttggtcatg tctcctttta tatggcgccg tcaagctctt 1140
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gcttatcaat gggagctacc aattaattgg gtattgaatt catgtaggca acaaaattga 1380
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agagaatgtt ttttttggca gaacaggaat tgttactact gtatttattg gaacttctac 1560
atcagtctgg atttgttcag aagaccttta gtgatttatg tatcagtga acttaaaaaa 1620
aaaaaaaaaa aa 1632

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<210> 54
<211> 374
<212> PRT
<213> Oryza sativa

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<400> 54
Met Ala Val Pro Leu Val Leu Val Val Leu Pro Leu Gly Leu Leu Phe
  1                      5                      10                      15

Leu Leu Ser Gly Leu Ile Ile Asn Ala Ile Gln Ala Val Leu Phe Leu
          20                      25                      30

Ser Ile Arg Pro Phe Ser Lys Ser Leu Tyr Arg Arg Ile Asn Arg Phe
          35                      40                      45

Leu Ala Glu Leu Leu Trp Leu Gln Leu Val Trp Leu Val Asp Trp Trp
          50                      55                      60

Ala Gly Val Lys Ile Gln Leu His Ala Asp Asp Glu Thr Tyr Lys Ala
          65                      70                      75                      80

Met Gly Asn Glu His Ala Leu Val Ile Ser Asn Asn Arg Ser Asp Ile
          85                      90                      95

Asp Trp Leu Ile Gly Trp Ile Leu Ala Gln Arg Ser Gly Cys Leu Gly
          100                     105                     110

Ser Thr Leu Ala Val Met Lys Lys Ser Ser Lys Phe Leu Pro Val Ile
          115                     120                     125

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Gly Trp Ser Met Trp Phe Ala Glu Tyr Leu Phe Leu Glu Arg Ser Trp
 130 135 140
 Ala Lys Asp Glu Lys Thr Leu Lys Trp Gly Leu Gln Arg Leu Lys Asp
 145 150 155 160
 Phe Pro Arg Pro Phe Trp Leu Ala Leu Phe Val Glu Gly Thr Arg Phe
 165 170 175
 Thr Pro Ala Lys Leu Leu Ala Ala Gln Glu Tyr Ala Val Ser Gln Gly
 180 185 190
 Leu Pro Ala Pro Arg Asn Val Leu Ile Pro Arg Thr Lys Gly Phe Val
 195 200 205
 Ser Ala Val Thr Ile Met Arg Asp Phe Val Pro Ala Ile Tyr Asp Thr
 210 215 220
 Thr Val Ile Ile Pro Lys Asp Ser Pro Gln Pro Thr Met Leu Arg Ile
 225 230 235 240
 Leu Lys Gly Gln Ser Ser Val Val His Val Arg Met Lys Arg His Ala
 245 250 255
 Met Ser Glu Met Pro Lys Ser Glu Asp Asp Val Ser Lys Trp Cys Lys
 260 265 270
 Asp Ile Phe Val Ala Lys Asp Ala Leu Leu Asp Lys His Leu Ala Thr
 275 280 285
 Gly Thr Phe Asp Glu Glu Ile Arg Pro Ile Gly Arg Pro Val Lys Ser
 290 295 300
 Leu Leu Val Thr Leu Phe Trp Ser Cys Leu Leu Leu Tyr Gly Ala Val
 305 310 315 320
 Lys Leu Phe Leu Trp Thr Gln Leu Leu Ser Thr Trp Lys Gly Val Gly
 325 330 335
 Phe Thr Gly Leu Gly Leu Ala Leu Val Thr Ala Val Met His Val Phe
 340 345 350
 Ile Met Phe Ser Gln Ser Glu Arg Ser Ser Ser Ala Lys Ala Ala Arg
 355 360 365
 Asn Arg Val Lys Lys Asp
 370

<210> 55

<211> 1498

<212> DNA

<213> Glycine max

<400> 55

gcacgaggtt	ccgtttgctg	acctgacctc	ggaaatccaa	agagggaaac	tcacggtggt	60
tcgttgcggt	gtgctctgct	ctgctccttt	gggcctgggc	tgggctgggc	tgggctgggc	120
tgggcatggc	tattgcagca	gcggccgtgg	tggtagcatt	gggcctgctc	ttcttcgcct	180
ccggcctcct	tgtaatctc	attcaggcaa	tatgctatgt	cgtcgttaagg	ccgggtgtcga	240
aaagtttgta	cagaaggatc	aaccgggtag	tagcagagct	cttggtggctg	gagcttgatat	300
ggcttattga	ttggtgggca	ggagttaagg	tccaaatatt	cacagatcat	gaaacctttc	360

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gtttaatggg taaagagcat gcacttgtga taagcaatca cagaagtgat attgattggc 420
ttgttggatg ggtttcagct cagcgttcag gttgtcttgg cagcactcta gctgtgatga 480
agaaatcttc aaagtttctg ccggtcattg gctgggtcaat gtggttttct gagtatcttt 540
ttctggagag aagttgggcc aaggatgaaa gcacattaaa gtcaggcatc cagcgactga 600
gtgatttccc tcttcccttt tggctagctc tctttgtaga aggaacgcgt tttacacagg 660
ccaaactatt agctgctcag gaatatgcca cttccactgg attgcctggt cctagaaatg 720
ttttgattcc aagaactaag ggttttggtt ctgcagtaag tcatatgcgc tcatttggtc 780
ctgccattta tgatgtaaca gtagccatcc ctaagagttc ccctgctcct acaatgctaa 840
gactcttcaa gggacaacct tcagtgggtg atgttcatat caagaggcat ttgatgaagg 900
aactgccaga tacagatgag gctgttgctc aatgggtgctg agatatattt gtggccaagg 960
atgctttggt agacaaacat atggctgagg gtacttttag tgatcaagag ctgcaggata 1020
ctggctgacc aataaagtct cttctggtag ttatatcttg ggcgtgtctg gttgttgctg 1080
ggctctgaaa gttcctgcaa tgggtcttcgt tactctcttc ctggaagggt gttgcatttt 1140
cagcttttgg tttggcagtt gttactgcac ttatgcaaat tctgattcaa ttctcacagt 1200
cagagcgttc aaacccggcc aagatcgtgc ctgcaaagtc aaaaaacaag gggctcttgat 1260
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ttttgctttc aacatcttat catagtatgc ttctattcta tatatgtact attatgaatg 1380
cttatcgatt cattgttttt aatttaatta ggatatacct ttgtattgac agtctagggg 1440
atggcctaga aaaattcaac cacctatttt attttaaaaa aaaaaaaaaa aaaaaaact 1498

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<210> 56
<211> 377
<212> PRT
<213> Glycine max

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<400> 56
Met Ala Ile Ala Ala Ala Val Val Val Pro Leu Gly Leu Leu Phe
  1             5             10             15

Phe Ala Ser Gly Leu Leu Val Asn Leu Ile Gln Ala Ile Cys Tyr Val
      20             25             30

Val Val Arg Pro Val Ser Lys Ser Leu Tyr Arg Arg Ile Asn Arg Val
      35             40             45

Val Ala Glu Leu Leu Trp Leu Glu Leu Val Trp Leu Ile Asp Trp Trp
      50             55             60

Ala Gly Val Lys Val Gln Ile Phe Thr Asp His Glu Thr Phe Arg Leu
      65             70             75             80

Met Gly Lys Glu His Ala Leu Val Ile Ser Asn His Arg Ser Asp Ile
      85             90             95

Asp Trp Leu Val Gly Trp Val Ser Ala Gln Arg Ser Gly Cys Leu Gly
      100            105            110

Ser Thr Leu Ala Val Met Lys Lys Ser Ser Lys Phe Leu Pro Val Ile
      115            120            125

Gly Trp Ser Met Trp Phe Ser Glu Tyr Leu Phe Leu Glu Arg Ser Trp
      130            135            140

Ala Lys Asp Glu Ser Thr Leu Lys Ser Gly Ile Gln Arg Leu Ser Asp
      145            150            155            160

Phe Pro Leu Pro Phe Trp Leu Ala Leu Phe Val Glu Gly Thr Arg Phe
      165            170            175

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Thr Gln Ala Lys Leu Leu Ala Ala Gln Glu Tyr Ala Thr Ser Thr Gly
 180 185 190
 Leu Pro Val Pro Arg Asn Val Leu Ile Pro Arg Thr Lys Gly Phe Val
 195 200 205
 Ser Ala Val Ser His Met Arg Ser Phe Val Pro Ala Ile Tyr Asp Val
 210 215 220
 Thr Val Ala Ile Pro Lys Ser Ser Pro Ala Pro Thr Met Leu Arg Leu
 225 230 235 240
 Phe Lys Gly Gln Pro Ser Val Val His Val His Ile Lys Arg His Leu
 245 250 255
 Met Lys Glu Leu Pro Asp Thr Asp Glu Ala Val Ala Gln Trp Cys Arg
 260 265 270
 Asp Ile Phe Val Ala Lys Asp Ala Leu Leu Asp Lys His Met Ala Glu
 275 280 285
 Gly Thr Phe Ser Asp Gln Glu Leu Gln Asp Thr Gly Arg Pro Ile Lys
 290 295 300
 Ser Leu Leu Val Val Ile Ser Trp Ala Cys Leu Val Val Ala Gly Ser
 305 310 315 320
 Val Lys Phe Leu Gln Trp Ser Ser Leu Leu Ser Ser Trp Lys Gly Val
 325 330 335
 Ala Phe Ser Ala Phe Gly Leu Ala Val Val Thr Ala Leu Met Gln Ile
 340 345 350
 Leu Ile Gln Phe Ser Gln Ser Glu Arg Ser Asn Pro Ala Lys Ile Val
 355 360 365
 Pro Ala Lys Ser Lys Asn Lys Gly Ser
 370 375

<210> 57
 <211> 1415
 <212> DNA
 <213> Triticum aestivum

<400> 57
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 tcttgacgat aaggccattc tcgaagcgat tgtaccggca gatcaacgta ttcttgccg 180
 agttgtgttg gcttcagctg atctggcttg tggactggtg ggcaggtatt aaggtagcag 240
 tgtatgcgga tccagaaact tggaaactaa tgggcaaaga gcacgccctt ctcatatcca 300
 atcatcgaag tgacattgat tggctggttg gatggatttt agcacagcgt tcaggatgtc 360
 ttggaagcgc aatagctata atgaagaaat cctcaaagt ccttcagtt attggttgg 420
 ccatgtggtt tgcagaatac ctcttttttg agagaagctg ggcaaaggat gaaaaaacac 480
 ttaaatcggg tcttcaaagg ttgaaagact tccccagatc attttggtt gccctttttg 540
 ttgagggtag aagatttact ccagcaaaac ttttagcagc tcaagaatat gcagtctcac 600
 agggtttgac agcgcctagg aatgtgctga ttccacgaac aaagggattt gtatcagctg 660
 taagtattat gcgtgacttt gtcccagcta tctacgatac aacagtgatt attccggaag 720
 attcgcctaa accaacaatg ctgcgtattc ttcagggaca atcatcagtt gttcatgtcc 780
 gcataaaacg ccattcaatg agtgatatgc ctaactcgga tgaggatgtt tcaaaatgg 840
 gcaaagatat attttagtagc aaggacgcgt tattggacaa acatatagca actggtactt 900

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ttgatgagga aattatacca attggccgtc cagtgaatc tttgatggtg gtcctgtctt 960
ggatcatgtct cctcctatat ggtgctcata gattcttaca gtggaccag ctcttgtoga 1020
cgtggaaagg agtgatcctc tttgcttctg gattggcaat ggtaaccgcc gttatgcatg 1080
tattcatcat gttctcgcag gccgagcgct caagctctgc gaaagcagca agggaccgag 1140
tgaagaagga ttgatagctc gtgtgaaatt cagtctatag gggaactgcc aatttattat 1200
gttcagaata tatgtagaca caggctccat gggtaaatac tagtatgtcc ttgttgtcct 1260
cggtaagagc ttcaggaatt ttgtgtggcg agaactgtga gctttcttcc ttctttctct 1320
actttgtaat gacttgtaaa gatttgcttt gccataccag gaatcgctgc tcgaatttat 1380
cgaagctttt ttttatcaaa aaaaaaaaaa aaaaa 1415

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<210> 58
<211> 374
<212> PRT
<213> Triticum aestivum

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<400> 58
Met Ala Ile Pro Leu Val Leu Val Leu Leu Pro Leu Gly Leu Leu Phe
 1          5          10          15

Leu Leu Ser Gly Leu Val Val Asn Thr Val Gln Ala Val Leu Phe Leu
 20          25          30

Thr Ile Arg Pro Phe Ser Lys Arg Leu Tyr Arg Gln Ile Asn Val Phe
 35          40          45

Leu Ala Glu Leu Leu Trp Leu Gln Leu Ile Trp Leu Val Asp Trp Trp
 50          55          60

Ala Gly Ile Lys Val Gln Val Tyr Ala Asp Pro Glu Thr Trp Lys Leu
 65          70          75          80

Met Gly Lys Glu His Ala Leu Leu Ile Ser Asn His Arg Ser Asp Ile
 85          90          95

Asp Trp Leu Val Gly Trp Ile Leu Ala Gln Arg Ser Gly Cys Leu Gly
100          105          110

Ser Ala Ile Ala Ile Met Lys Lys Ser Ser Lys Phe Leu Pro Val Ile
115          120          125

Gly Trp Ser Met Trp Phe Ala Glu Tyr Leu Phe Leu Glu Arg Ser Trp
130          135          140

Ala Lys Asp Glu Lys Thr Leu Lys Ser Gly Leu Gln Arg Leu Lys Asp
145          150          155          160

Phe Pro Arg Ser Phe Trp Leu Ala Leu Phe Val Glu Gly Thr Arg Phe
165          170          175

Thr Pro Ala Lys Leu Leu Ala Ala Gln Glu Tyr Ala Val Ser Gln Gly
180          185          190

Leu Thr Ala Pro Arg Asn Val Leu Ile Pro Arg Thr Lys Gly Phe Val
195          200          205

Ser Ala Val Ser Ile Met Arg Asp Phe Val Pro Ala Ile Tyr Asp Thr
210          215          220

Thr Val Ile Ile Pro Glu Asp Ser Pro Lys Pro Thr Met Leu Arg Ile
225          230          235          240

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Leu Gln Gly Gln Ser Ser Val Val His Val Arg Ile Lys Arg His Ser
 245 250 255
 Met Ser Asp Met Pro Asn Ser Asp Glu Asp Val Ser Lys Trp Cys Lys
 260 265 270
 Asp Ile Phe Val Ala Lys Asp Ala Leu Leu Asp Lys His Ile Ala Thr
 275 280 285
 Gly Thr Phe Asp Glu Glu Ile Ile Pro Ile Gly Arg Pro Val Lys Ser
 290 295 300
 Leu Met Val Val Leu Ser Trp Ser Cys Leu Leu Leu Tyr Gly Ala His
 305 310 315 320
 Arg Phe Leu Gln Trp Thr Gln Leu Leu Ser Thr Trp Lys Gly Val Ile
 325 330 335
 Leu Phe Ala Ser Gly Leu Ala Met Val Thr Ala Val Met His Val Phe
 340 345 350
 Ile Met Phe Ser Gln Ala Glu Arg Ser Ser Ser Ala Lys Ala Ala Arg
 355 360 365
 Asp Arg Val Lys Lys Asp
 370